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BIBLIOGRAPHY

CHINESE SCIENTIFIC AND TECHNICAL PERIODICALS: SELECTED BIBLIOGRAPHY. 21 Apr 59 [54]p. 104 refs. AF 1255713.
Order from LC or SLA mi$3.60, ph$9.30 59-16450

Trans. from Chinese open sources, 1950-1958.

Contains 104 titles selected from the holdings of the Library of Congress etc. Titles are supplied in Chinese characters as well as in transliterated form. A brief annotation is provided for each title. Among the subjects covered are: physics, chemistry, earth sciences, astronomy, mathematics, electronics,. metallurgy and the various branches of engineering. A subject index is included.

DISSERTATION[S] FOR DEGREES IN SCIENCE AND ENGINEERING DEFENDED AT USSR HIGHER EDUCATIONAL INSTITUTIONS. 15 Sep 59, 19p.
161 refs. JPRS: L-1856-D.
Order from OTS $0.50 59-11782

Consists of list of dissertations.

INDEX OF ABBREVIATED AND FULL TITLES OF SCIENTIFIC AND TECHNICAL PERIODICAL LITERATURE. [1959] [250]p. F-TS-9640/III.
Order from OTS $4.00 59-21176

Partial trans. of mono. Ukazatel' Sokrashchennykh i Polnykh Nazvaniy Nauchnoy i Tekhnicheskoy Literatury, Moscow, 1957.

This index contains the listing of all the Soviet and foreign periodical and non-periodical series publications (printed in languages employing the Russian alphabet), whose materials are processed in the abstract journals of the Institute for Scientific Information, USSR Academy of Sciences; the index represents the most complete Soviet reference publication on the Soviet and foreign periodical literature.

INTERROGATION TECHNIQUES, PROCEDURES AND EXPERIENCES: COMPREHENSIVE BIBLIOGRAPHY. 10 June 59 [18]p. AF 1255854.
Order from LC or SLA mi$2.40, ph$3.30 59-18425

Trans. from Open Sources, 1915-1957.

The entries (over 150) are arranged alphabetically by author.

UNIDENTIFIED FLYING OBJECTS -- BIBLIOGRAPHY. 4 Aug 59 [8]p. 81 refs. AF 1255969.
Order from LC or SLA mi$1.80, ph$1.80 59-19719

Consists of entries from various open Soviet Bloc and Western sources, 1946-1959.

Library of Congress, Washington, D. C.
EAST EUROPEAN ACCESSIONS INDEX. Oct 59, 275p.
Order from GPO $10.00/year

Designed to serve the English-speaking user, this index lists post World War II publications received by the Library of Congress and over 100 major American research libraries from Albania, Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Poland, Rumania, and Yugoslavia in all fields of knowledge. Arrangement in the first part is by country and within each country by 17 subject classes. In addition to the entry in the original language, a translation of the title or a descriptive annotation in English is given for each monograph and periodical, with the tables of contents translated into English for selected periodicals. The second part, comprising approximately two-thirds of the Index, consists of a subject index to all articles appearing in periodicals for which the tables of contents are translated and to all monographs listed.

GIDROTEKHNIKA I MELIORATSIYA (USSR) 1959, (Hydraulic Engineering and Soil Improvement). [1959].
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 6, p. 3-64, PB 141 092T-14
No. 7, p. 3-64, PB 141 092T-15

Consists of abstracts in English.

Ch'en, Cheng-hsiang.
THE MULTIPLE CROPPING INDEX IN TAIWAN. [1958] 6p. JPRS (DC) L-495.
Order from OTS $0.50 PB 141 219T

Trans. of Ti li yu ch'an yeh (China) [1956] v. 1, no. 1, p. 48-49.

Chizhevskiy, M. G., Pigolkin, P. N. and others.
SOVIET AGRICULTURE: SELECTED TRANSLATIONS. (INCLUDING CROPS, IMPLEMENTS, AND LIVESTOCK). NO. 3. 17 Aug 59, 65p. 8 refs. JPRS: 856-D.
Order from OTS $1.75 59-11749

Trans. of selected articles from 6 Russian periodicals.

Contents:
The decrees of the 21st Party Congress concerning the planting of graded seeds only to be pursued, unsigned article
Methods of increasing average yields during the seven-year plan period, by M. G. Chizhovskiy
Decreasing the prime cost of production and increasing labor productivity in kolkhozes, unsigned article
The tractor and agricultural machine building industry at the opening date of the 21st Party Congress, unsigned article
Problems in agricultural machine building in connection with the reorganization of machine tractor stations, by P. N. Pigolkin and D. I. Solv'yev
Important problems on increasing beef production, by Ye. Chemenev
The development of the mash fodder industry during the seven-year plan period, by P. V. Demchenko
(See also 59-11707, 59-11745)

Erismann, Hans.
SWIVEL PLOW FOR TRACTOR DRIVE, tr. by FHB. 19 June 59, 7p. (figs. omitted)
Order from LC or SLA mi$1.80, ph$1.80 59-18296

Trans. of Swiss patent 273,309, Class 2a; patented from 15 Feb 51, applied for 26 Mar 49, pub. 1 May 51.

The invention has for its object a swivel plow for tractor drive, equipped with a lifting device and a rotary shaft rotatably mounted in a swivel casing, with which rotary shaft the plow beam is connected; also equipped with a device which brings about, when the body of the plow is lifted, its automatic swiveling. The invention provides, besides the main plow beam connected with the rotary shaft, a second plow beam laterally displaced with respect to the main beam, on which second beam the plowshares are mounted and which is connected with the main plow beam. Expediently the second plow beam is connected at its two ends with the main plow beam, the front connection being adjustable for varying the distance from the main plow beam and thereby the width of the furrows. (Extracted from the report)

Khizhnyakov, V., Ustinov, M. and others.
SOVIET AGRICULTURE: SELECTED TRANSLATIONS (Including Crops, Implements and Livestock).
7 Aug 59, 203p. (6 figs. omitted). JPRS: 849-D.
Order from OTS $3.50 59-11745

Trans. of selected articles from 5 Russian periodicals.

Contents:
For wider introduction of monetary pay for kolkhoznik work, by V. Khizhnyakov
Exchange of experience regarding monetary payment in kolkhozes, by M. Ustinov
Costs of production in kolkhozes, unsigned article
Development prospects of domestic tractor building, by S. I. Akopyan
Mounting accessory machines on tractors [Parts I and II], by N. Zvolinskiy
The SSh-65 Self-propelled chassis, by Kh. I. Izakson
The SSh-45 self-propelled chassis with mounted harvesting machines, by M. I. Kletskin and E. A. Makhlin
Principal tasks of plants producing tractors and agricultural machines in the RFSFR in 1958, by N. A. Sarkisov
Mounted agricultural machines, by N. P. Zvolinski
Test analysis of the SK-3 self-propelled combine and its modifications, by I. S. Churbanov
Remodeling the S-6 tractor-drawn combine into a self-propelled machine, by A. F. Kononenko, K. F. Ul'yanov, and A. I. Bednov
Forage-processing machines, by V. V. Belozor, E. M. Sos unov, and A. P. Sobolev
Feeding long-horned cattle corn ensilage, by G. I. Bakhitov
Poultry raising on virgin lands, by N. Tretyakov and I. Masliyev
(See also 59-11707, 59-11749)

Lemiere, Gaoton-August-Paul.
MACHINE FOR MAKING BALES OF MATERIALS SUCH AS HAY. [1959] [7]p. (7 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17850

Trans. of French patent 590,562 [gr.] I [cl.] 1, appl. 1 Dec 24, granted 20 Mar 25, pub. 19 June 25.

The present invention fabricates hay bales that are not bound. The machine forms a continuous ribbon of material destined to be put in bales, the ribbon being then folded into as many thicknesses, or layers, as required for obtaining a bale of desired weight. After cutting the ribbon, the parcel will hold together if the hay stalks which protrude from any one layer are forced to penetrate into the neighboring layers. The machine is mounted on a carriage that can be moved

on the ground toward hay lying around, either uniformly spread, or in parallel rows, in small heaps, or in any other way.

Animal Husbandry

Kapatsina, V. and Dzhurdzhu, T.
AEROSOLTHERAPY IN VETERINARY MEDICINE (Lecheniye Aerozolyami v Veterinarii). 30 June 59, 9p. (3 illus. omitted). Trans. V1444.
Order from LC or SLA mi$1.80, ph$1.80 59-18311

Trans. of Veterinariya (USSR) 1959, v. 36, no. 5, p. 41-45.

The principles of aerosol therapy in general are discussed. Applications in veterinary medicine which are enumerated include therapy of diseases of the respiratory tract, diabetes, helminthic infestation and diseases of the eye. An apparatus is described for administration of oxygen to horses. The device can be adjusted for use in treating smaller animals.

Legagneur, E. Salmon and Michel, M.
ANTIBIOTICS AND THE GROWTH OF SWINE. VII. THE ACTION OF ANTIBIOTICS UPON SUCKLING PIGS (Les Antibiotiques et la Croissance du Porc. VII. Action des Antibiotiques sur Porcelets Allaites). [1959] [17]p. 14 refs.
Order from SLA mi$2.40, ph$3.30 59-20171

Trans. of Annales de Zootechnie (France) 1955 [v. 4] p. 153-163.

A mixture of aureomycin and chloramphenicol was orally administered to suckling piglets by presenting it to them incorporated in dried and pulverized soil, which they normally consume. At the age of one month, the antibiotics were presented in skimmed milk. Results of the experiment, which was drawn upon 16 litters, indicate that the method of administration via soil and skimmed milk is satisfactory. There was a significant average increase of weaning weight in comparison to the control group, plus a certain improvement in health, and a reduction of mortality.

Plant Cultivation

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 21 (Soviet Abstracts. Biology). 25 Aug 59, 13p. JPRS: 1863-N.
Order from OTS $1.00 59-13847

Contents:
Section L. Meadow Cultivation. Abstracts 95856-95892.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Kirillov, Yu. I. and Shmarayev, G. E.
TWENTY-FIVE YEARS OF EXISTENCE OF THE ARAL REGION EXPERIMENTAL STATION (Priaral'skoy Opytnoy Stantsii 25 let). [1959] 11p. (4 figs. omitted). Trans. V1447.
Order from LC or SLA mi$1.80, ph$1.80 59-19254

Trans. of Selektsiya i Semenovodstvo (USSR) 1958, v. 23, no. 5, p. 25-30.

Conditions in the Aral region, which until recent times was inhabited solely by nomad herdsmen, include a temperature range of -45° C to 42° C, strong winds and sandstorms, and an average yearly precipitation of 150 mm. Trench farming has proved to be a successful agricultural method; crops thus cultivated include tomatoes, potatoes, beets, carrots and berries. Experiments with irrigation using artesian water have been conducted. New varieties of heat-resistant potatoes, onions and cucumbers, as well as drought-resistant and winterhardy varieties of alfalfa, sorghum, millet, wheat and Sudan grass have been developed.

Udintsov, P. S.
PLANT PROTECTION IN THE LATVIAN SSR (Zashchita Rastenii v Latviyskoy SSR). [1959] 7p. (2 illus. omitted). Trans. A-1041.
Order from LC or SLA mi$1.80, ph$1.80 59-18275

Trans. of Zashchita Rastenii ot Vrediteley i Bolezney (USSR) 1959, v. 4, no. 2, p. 4-6.

ASTRONOMY

Astrophysics

Boischot, Andre, Blum, Emile Jacques and others.
OBSERVATION OF AN ECLIPSE OF THE CRAB NEBULA. [1959] 4p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-20312

Trans. of Academie des Sciences, Paris C[omptes] R[endus] (France) 1956, v. 242, no. 15, p. 1849-1852.

An eclipse of the Crab Nebula by the Moon was observed on frequencies 169 and 900 Mc. The source of radioelectric emission is closely connected with the visible structure of the nebulosity. (Author)

Kazantsev, A. and Florenskiy, K. P.
A NEW HYPOTHESIS REGARDING THE TUNGUSKA PHENOMENON: THE PLANET OF PEACE [AND] A NEW EXPEDITION TO THE SITE OF THE FALL OF THE TUNGUSKA METEORITE. 2 June 59 [4]p. AF 1255844.
Order from LC or SLA mi$1.80, ph$1.80 59-16965

Summary trans. with partial verbatim trans. of articles from Literaturnaya Gazeta, 1959, 6 Jan. p. 1, and Znaniye-Sila, 1959, 4 Apr. p. 20-22.

In the first portion of the document (that portion taken from Alexander Kazantsev's article in Literaturnaya Gazeta) the hypothesis previously suggested that the catastrophe of 1908 in the Siberian taiga (60. 5 N, 102. 2 E) near the Tunguska River was an explosion of a space ship, is midly defended. The interest in the theory is called "legitimate." "Meteorists who, instead of presenting scientific arguments, are still obstinately anathematizing the adherents of this hypothesis and have even written to the Writers' Union demaning that the author of the hypothesis be forbidden to defend it, are in an'unenviable position." Evidence reviewed in support of the theory includes the results of the 1958 expedition to the site (which, incidentally, was led by K. P. Florenskiy, the author of the second portion of this document), which established that the explosion took place at an altitude of 2 km, and that the soil of the area is radioactive. (Abstractor's note: Although the originator of the theory is not named in the article, it is Kazantsev himself. See his book, A Guest from the Universe, in Russian.) The second and longer portion of the document (that portion taken from Florenskiy's article in Zaniye-Sila) reviews the data gathered by the various Soviet expeditions to the site of the catastrophe over the past 38 years. Although neither crater nor meteor fragments have ever been found, Florenskiy's views are expressed by the statement, "At the present time, the supposition that it might have been an explosion of a meteorite in the air is the most plausible." (See also 59-16966)

Lyot, Bernard and Dollfus, Audouin.
POLARIZATION OF EARTH-SHINE FROM THE MOON. [1959] 4p. 7 refs.
Order from SLA mi$1. 80, ph$1. 80 59-20288

Trans. of Academie des Sciences, Paris. C[omptes] R[endus] (France) 1949, v. 228, no. 23 [p. 1773-1775].

Eight nights of observation, made between 7 April and 9 May 1949 with the coronagraph of 20 cm from the Pic du Midi, all between the phases 38° and 115° established that the polarization is very strong, 1, 2 times stronger on the dark "seas" than on the light regions. It is maximum for an angle of phase near 80°, in which case it exceeds 10% on the "seas". The plane of polarization is parallel to the plane passing through the Sun. Polarization from the light of the Moon was also studied during the total eclipse of 13 April 1949. In the Earth's shadow, the Moon maintains some very weak traces of polarization, changeable from one point to another of the disk, attributable to the fact that the angle of vision is not zero but varies in the same way as the plane of vision, from one point to another on the eclipsed lunar surface.

Sharonov, V.
THE MOON AND INTERPLANETARY SPACE FLIGHTS (Luna i Polety v Kosmos). 13 Mar 58 [4]p. AF 1165884.
Order from LC or SLA mi$1. 80, ph$1. 80 59-22199

Summary trans. of Izvestiya (USSR) 1958, no. 28, p. 4, col. 1-5.

This article, which is popular in its approach, is largely speculative. It is stated that the moon will become a populated world, and that it will be the first station on the road to the conquest of the solar system.

BEHAVIORAL SCIENCES
Psychology

Kabanova-Weller, Ye. N.
FORMATION OF SPACE PERCEPTION AND SPATIAL CONCEPTS IN CHILDREN. 24 Aug 59, 14p. 10 refs. JPRS: L-954-N.
Order from OTS $0. 50 59-13843

Trans. of Voprosy Psikhologii (USSR) 1958, v. 4, no. 3, p. 161-167.

A collection of articles which appeared as a monograph, Izvestiya APN RSFSR (News of the Academy of Psychological Sciences) no. 86, edited by B. G. Anan'yev (1956) is reviewed.

Pechhold, Engelbert.
AIMS AND POSSIBILITIES OF INDUSTRIAL PSYCHOLOGY IN IRON AND STEEL PLANTS. [1959] 16p. (20 figs. omitted) 5 refs.
Order from SLA mi$2. 40, ph$3. 30 59-20424

Trans. of Arch[iv] f[ür das] Eisenhüttenwesen (Germany) 1937 [v. 11, no. 4] p. 203-213.

Rudik, P. A.
CONCEPTS IN PSYCHOLOGY. 8 Sep 59, 101p. 48 refs. JPRS: 904-D.
Order from OTS $2. 50 59-11778

Trans. of Russian mono. Psikhologiya, Moscow, 1958, p. 27-29, 227-252, 287-325 and 326-350.

Usmanskiy, L. I.
EXPERIMENTAL STUDY OF TYPOLOGICAL CHARACTERISTICS OF THE NERVOUS SYSTEM IN CHILDREN (FROM PLAY MATERIAL). [1959] 17p. (1 photo omitted) 10 refs. JPRS: L-952-N.
Order from OTS $0. 50 59-13841

Trans. of Voprosy Psikhologii (USSR) 1958, v. 4, no. 1, p. 184-190.

Zaporozhets, A. V.
ORIGIN AND DEVELOPMENT OF CONSCIOUS CONTROL OF MOVEMENTS IN MAN. 1 Sep 59, 20p. 11 refs. JPRS: L-951-N.
Order from OTS $0. 75 59-13840

Trans. of Voprosy Psikhologii (USSR) 1958, v. 4, no. 1, p. 24-36.

Gorelik, A. N.
REHABILITATION OF RHEUMATIC HEART AND CORONARY PATIENTS BY CARDIOPERICARDIOMYOPEXY (La Réhabilitation des Rhumatisants Cardiaques et des Coronariens par la Cardiopéricardiomyopexie). [1959] 11p.
Order from SLA mi$2.40, ph$3.30 59-15679

Trans. of Médecine et Hygiène (Switzerland) 1955, no. 13, p. 105-107.

The operation consists in joining the myocardium to the pericardium, and the pectoral muscle to the pericardium with the object of revascularizing the myocardium. A series of 150 operations is presented, comprising 100 cases of coronary insufficiency (operative mortality 5%) and 50 cases of cardiac rheumatism with valve injury (operative mortality 12%).

Anatomy and Physiology

PROBLEMS OF HEMATOLOGY AND BLOOD TRANSFUSION, 1959, VOL. 4, NO. 2. Aug 59, 80p.
Order from PP $20.00/year

Trans. of Problemy Gematologii i Perelivaniya Krovi (USSR) 1959, v. 4, no. 2, p. 3-46.

Coster, Lucien de.
A NEW REFERENCE LINE FOR THE STUDY OF SAGITTAL TELERADIOGRAPHS (Une Nouvelle Ligne de Reference pour l'Étude des Téléradiographies Sagittales). [1959] 3p.
Order from SLA mi$1.80, ph$1.80 59-15606

Trans. of Club International de Morphologie Faciale. Acta (East Germany) 1952, Sonderabdruck.

Marneffe, Robert de.
EXPERIMENTAL AND MORPHOLOGICAL RESEARCHES ON BONE VASCULARIZATION. General Discussion of Results, and Conclusion. Mar 59, 12p.
Order from SLA mi$2.40, ph$3.30 59-15473

Excerpt trans. (p. 65-74) of mono. Recherches Morphologiques et Expérimentales sur la Vascularisation Osseuse (Les ed. Acta Medica Belgica, Brussels) 1951, 80p.

Morand, Sauveur-Francois.
ON THE CHANGES WHICH OCCUR IN CUT ARTERIES, IN WHICH IT IS SHOWN THAT THEY CONTRIBUTE ESSENTIALLY TO THE CESSATION OF THE HEMORRHAGE (Sur les Changemen[ts] qui Arrivent aux Artères Coupées; ou l'On Fait Voir qu'Ils Contribuent Essentiellement a la Cessation de l'Hemorragie) ed. by Planque. [1959] 6p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15612

Trans. of Bibliotheque Choisie de Médecine (France) 1759, v. 5, p. 281-286. (Dissertation taken from Memoires de l'Academie Royal, 1736, p. 321).

Biochemistry

BIOCHEMISTRY, 1959, VOL. 24, NO. 1. 1959, 161p.
Order from CB $10.00, $20.00/year

Trans. of Biokhimiya (USSR) 1959, v. 24, no. 1, p. 3-[171].

Kosenko, S. A. and Krayko, E. A.
CERTAIN DATA FROM THE STUDY OF VITAMIN C REQUIREMENT IN CHILDREN (Nekotoryye Materialy po Izucheniyu Obespechennosti Detskogo Organizma Vitaminom C). Aug 59 [7]p. 3 refs. R.T.S. no. 1032.
Order from LC or SLA mi$1.80, ph$1.80 59-19246

Trans. of Voprosy Pitaniya (USSR) 1958, v. 17, no. 4, p. 24-28.

Lynen, F. Eggerer, H. and others.
THE BIOSYNTHESIS OF TERPENES. Communication No. 3 on Farnesyl Pyrophosphate and 3-Methyl-Δ3-Butenyl-1-Pyrophosphate, the Biological Precursors of Squalene. 2 July 59 [21]p. 36 refs.
Order from SLA mi$2.70, ph$4.80 59-20134

Trans. of Angewandte Chemie (West Germany) 1958, v. 70, no. 24, p. 738-742.
Another translation is available from LC or SLA mi$2.40, ph$3.30 as 59-12913, 29 Jan 59, 18p.

Specht, Herman.
CONCERNING THE PROTEIN DECOMPOSITION BY A CULTURE EXTRACT OF ASPERGILLUS ORYZAE AND THE BIOLOGICAL VALUE OF THE PEPTONES OF ASPERGILLUS (Über den Eiweissabbau durch Kulturextrakte des Aspergillus Oryzae und den Biologischen Wert von Aspergilluspeptonen). [1959] [14]p. 17 refs.
Order from SLA mi$2.40, ph$3.30 59-20147

Trans. of Zeitschrift für Lebensmittel-Untersuchung und -Forschung (West Germany) 1957, v. 105, no. 3, p. 207-210.

Proteases of surface cultures of Aspergillus oryzae were able to decompose to a large extent wheat gluten, casein and haemoglobin within a wide pH range to soluble nitrogen compounds; Zein and corn gluten could be decomposed only to a small extent. Yeast aeration experiments showed that the biological value of the protein solutions, which were obtained by the action of proteases of Aspergillus oryzae on wheat gluten and casein, corresponded to that of peptone.

Tsuneki, Nagataka.
STUDIES ON THE SYNTHESIS OF MERCAPTURIC ACID. I. MECHANISM OF FORMATION OF MERCAPTURIC ACID IN THE RABBIT, tr. by William Himel. 4 Mar 59, 12p. (8 figs. omitted) 16 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-14277

Trans. of Seikagaku (Japan) 1958, v. 29, no. 12, p. 915-918.

We synthesized p-chlorophenol and its derivatives and p-chlorothiophenol which can be considered as intermediate metabolic products of mercapturic acid formation, and we administered them to rabbits. No mercapturic acid formation could be observed. The administration of BAL (vegetable oil solution of 2,3-di-mercapto propanol) increased mercapturic acid formation, but the reason for this is unknown. (Author) (See also 59-14317)

Botany

Inoue, T.
MICROCHEMICAL STUDIES ON PLANT COMPONENTS. XXIII. SEPARATION OF XANTHINE DERIVATIVES BY PAPER CHROMATOGRAPHY. [1959] 5p.
Order from ATS $10.00 ATS-22L34J

Trans. of Yakugaku Zasshi (Japan) 1956, v. 76, no. 6, p. 629-631.

Kariyone, T. and Inoue, T.
MICROCHEMICAL STUDIES ON PLANT COMPONENTS. XXIV. SEPARATION OF XANTHINE DERIVATIVES BY PAPER IONOPHORESIS. [1959] 3p.
Order from ATS $4.75 ATS-23L34J

Trans. of Yakugaku Zasshi (Japan) 1956, v. 76, no. 6, p. 747-748.

Rajhathy, T.
TETRAPLOIDS OF TRITICUM MONOCOCCUM L. (2n=28) (Tetraploids Triticum Monococcum L. (2n=28)). [1959] [19]p. 8 refs.
Order from SLA mi$2.40, ph$3.30 59-20152

Trans. of der Zuchter (Germany) 1957, v. 27, no. 2, p. 85-89.

By the use of the colchicine method, it was possible to produce a fairly large number of tetraploids of T. monococcum (2n equals 28). These plants furnish initial material for genome A containing artificially induced polyploid lines. Tetraploid plants are characterized by the pronounced enlargement of their organs especially by that of the spikes, spiklets, grain size, grain weight, and further by the weaker tillering. The fertility of the tetraploid plants was decreased, however in this regard considerable individual differences were to be observed, which can be connected with a cytological unbalance. The species characteristics (glume properties) remain unchanged. The present work deals with the importance of experimentally produced polyploid lines in the solution of several genetic problems. (Author)

Rakitin, Yu. V. and Potapova, A. D.
EFFECT OF HERBICIDES ON THE RESPIRATION AND PHOTOSYNTHESIS OF OATS AND SUNFLOWERS. [1959] 6p.
Order from ATS $5.75 ATS-68L34R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 126, no. 6, p. 1371-1374.

Rutberg, R. A.
PRODUCTION AND PROPERTIES OF THE POLYSACCHARIDE ZYMOSAN, ACTIVE WITH RESPECT TO THE PROPERDIN SYSTEM. [1959] 6p.
Order from ATS $7.40 ATS-98L33R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 125, no. 4, p. 931-934.

General Biology

JOURNAL OF CYTOLOGY, 1959, VOL. 1, NO. 1. 6 Aug 59, 221p. JPRS: 1802-N.
Order from OTS $3.50 59-13739

Trans. of Tsitologiya (USSR) 1959, v. 1, no. 1, p. 3-140.

Petrov, D. F.
PHILOSOPHICAL PROBLEMS IN THE THEORY OF THE MATERIAL BASIS OF HEREDITY. 1 Sep 59, 23p. 21 refs. JPRS: L-957-N.
Order from OTS $0.75 59-13848

Trans. of Voprosy Filosofii (USSR) 1958, no. 7, p. 102-112.

Microbiology

JOURNAL OF MICROBIOLOGY, EPIDEMIOLOGY AND IMMUNOBIOLOGY, 1958, VOL. 29, NO. 12, P. 1873-2027. 1959, 1v.
Order from PP $50.00/year

Trans. of Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1958, v. 29, no. 12, p. 3-144

Bonnefoi, Antoine, Burgerjon, Albertus, and Grison, Pierre.
BIOLOGICAL DETERMINATION OF PREPARATIONS OF SPORES OF BACILLUS THURINGIENSIS BERLINER. 13 Feb 59, 5p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15410

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1958, v. 247, no. 17, p. 1418-1420.

The report describes a method for biological determination of preparations of spores of Bacillus thuringiensis Berliner, by which the virulence of these preparations for the larvae of Pieris brassicae L. can be defined in a constant manner in "biological unit". This value is based on the comparison of the LD_{50} obtained with the preparation to be tested and a standard preparation, with relation to the master standard LD_{50}. (Author's summary)

(Biological Sciences--Microbiology)

Tamura, G. and Suzuki, Y.
NUTRITIONAL REQUIREMENTS OF HIOCHI BACTERIA. Part III of Hiochic Acid, A New Growth Factor for Hiochi Bacteria. [1959] 7p.
Order from SLA mi$1.80, ph$1.80 59-20296

Trans. of Nihon Nogei-Kagakkai Shi (Japan) 1958 [v. 32, no. 10] p. 778-783.

Tausson, T. A.
OXIDATION OF PARAFFIN WAX BY YEASTS AND YEAST-LIKE ORGANISMS. [1959] 8p. (4 figs. omitted) 10 refs. M. 190.
Order from LC or SLA mi$1.80, ph$1.80 59-19084

Trans. of [Mikrobiologiya] (USSR) 1939, v. 8, no. 7, p. 828ff.

Organisms of the Debaryomyces, Hansenula, Endomyces, Torulopsis, and Monilia genera were found to be capable of developing on a mineral medium with paraffin wax as a source of carbon. The organisms were cultured at 25°C at pH = 5.24. The oxidation of paraffin wax apparently takes place with the formation of carbohydrates and their subsequent oxidation via fatty acids to CO_2 and H_2O. A certain accumulation of fatty acids takes place in the medium. As a result of the activity of yeasts and yeast-like organisms, growth substances of the "bios" and of the vitamin B_1 type (or its components) are formed in the mineral medium with paraffin wax. These substances accumulate in the filtrates in various quantities, depending upon the genus and the species of the organism.

Zhukov-Verezhnikov, N. N. and Pekhov, A. P.
GENETICS OF MICROORGANISMS AND PRESENT-DAY VIEWS ON HEREDITY. 25 Aug 59, 20p. 40 refs. JPRS: L-941-N.
Order from OTS $0.75 59-13833

Trans. of Voprosy Filosofii (USSR) 1958, no. 6, p. 127-138.

Pathology

Ch'en, P'ei-fu and Wang, Chao-ku.
ANTI-CHEMICAL CORPS. [1958] 22p. (17 illus. omitted) H-1613.
Order from OTS $0.75 59-11275

Trans. of Fan Hua-Hsueh Ping, Peking, 1957, p. 3-top of 34.

Atomic, chemical, and bacteriological weapons are discussed along with ways and means of coping with them.

Dezeimeria, Jean-Eugène.
HELVETIUS, JEAN-CLAUDE-ADRIEN; BIOGRAPHY. [1959] 3p. 13 refs.
Order from SLA mi$1.80, ph$1.80 59-15547

Trans. of mono. Dictionnaire Historique de la Médecine Ancienne et Moderne [1836] v. 3, pt. 1, p. 105-107.

Matsuura, Kiyoshi, Fujita, Kichishiro and others.
CONCERNING CLINICAL EXPERIENCE WITH HEMATOPORPHYRIN-Hg (MH) WITH FATAL CANCER PATIENTS. [1959] [5]p. (foreign text included).
Order from SLA mi$1.80, ph$1.80 59-17926

Trans. of Gann (Japan) 1958, v. 49, suppl. [p. 28-30].

Twelve patients out of a total of 62 terminal cases are still alive after 13 months of hematoporphyrin-Hg therapy, although 3 are getting worse. Two cases in which improvement has been exceptional are those of a 10-year old girl suffering from lumbar sarcoma, and a 1 1/2-year-old girl diagnosed as having a Wilms tumor. Neither had responded to radiation therapy. Both showed rapid reduction of the neoplasm coupled with rapid general improvement. Height and weight of both are above average for their respective ages.

Nishi, Mitsumasa, Ikehara, Wataru and others.
A HISTOCYTOLOGICAL STUDY CONCERNING THE RELATIONSHIP BETWEEN HEMATOPORPHYRIN-Hg(MH), PORPHYRIN, MALIGNOLIPIN AND THE MALIGNANT TUMOR. [1959] [5]p. (foreign text included).
Order from SLA mi$1.80, ph$1.80 59-17927

Trans. of Gann (Japan) 1958, v. 49, suppl. [p. 27-28].

Schubert, Gerhard.
ISOTOPES AND CLINICAL MEDICINE (Isotope und Klinische Medizin). [1959] [15]p.
Order from SLA mi$2.40, ph$3.30 59-20165

Partial trans. (p. 226-227 and 232-234) of Klinische Wochenschrift (Germany) [1957] v. 35, no. 5, p. 225-236].

This is a general review of the diagnostic and therapeutic value of radioisotopes. Specific reference is made to the use of radioisotopes in determining the proper time for transplanting a roll-flap, and to the effectiveness of radioiodine therapy in cardiovascular disorders. There is no bibliography.

Shenk, N. A., Eydinova, M. B., and Mitbreyt, I. M.
THERAPEUTIC AND DIAGNOSTIC VALUE OF GALANTHAMINE FOR PATIENTS WITH VARIOUS STAGES OF POLIOMYELITIS, tr. by Paul V. DePorte. 11 Aug 59, 13p. (3 figs. omitted) 1 ref.
Order from LC or SLA mi$2.40, ph$3.30 59-18837

Trans. of Farmakologiya i Toksikologiya (USSR) 1956, v. 19, no. 4, p. 36-41.

Soto Yarritu, F. and Figuerido Santurtun, J. A.
INTRASPINAL RESERPINE, BARBOTAGE. OUR EXPERIENCE IN 50 CASES (Reserpina Intrarraquidea, Bombeo. Nuestra Experiencia in Cincuenta Casos). [1959] 5p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15885

Trans. of Actas Luso-Espan[olas] Neurol[ogico]-Psiquiatr[as] (Spain) 1957, v. 16, [no. 4] p. 305-307.

Intraspinal injection of reserpine followed by barbotage is described as useful in those desperate cases of schizophrenia in which conventional methods of sedation do not succeed. There is a marked and more lasting sedation when the spinal injection is reinforced by reserpine perorally. The lack of severe accidents is emphasized.

Vivell, O., Deibel, R. and others.
RESULTS OF SEROLOGICAL STUDIES OF CASES WITH ACUTE ABACTERIAL DISEASES OF THE UPPER RESPIRATORY TRACT WITH THE INFLUENZA AND ADENO VIRUS COMPLEMENT FIXATION REACTION (Ergebnisse Serologischer Untersuchungen bei Akuten Abakteriellen Erkrankungen der Oberen Luftwege mit der Grippe- und Adeno-Virus-Komplementbindungsreaktion) tr. by P. Hajdu. 31 Mar 59, 20p. (4 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-14624

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1958, v. 83, no. 19, p. 834-838.

Pharmacology and Toxicology

PHARMACOLOGY AND TOXICOLOGY, 1958, VOL. 21, NO. 6, P. 527-641. 1959, 1v.
Order from CB $10.00, $25.00/year

Trans. of Farmakologiya i Toksikologiya (USSR) 1958, v. 21, no. 6, p. 3-[90].

PROCEDURE FOR THE PRODUCTION OF THE CIRCULATORY HORMONE CALLICREIN. 6 Aug 54 [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17840

Trans. of Danish patent 14102, TH/GT/D, LeA 1045 Dan., by Farbenfabriken Bayer, Leverkusen-Bayerwerk, Germany.

The procedure is unusual in that the callicrein-containing glands undergo a thermolysis in aqueous suspension between pH 4 to 7 and a temperature of 430 to 60°C, with the callicrein-containing aqueous phase separating from the residue. It is not absolutely necessary to add water to the gland material for the formation of an aqueous suspension, because the finely ground gland material by and in itself may contain an amount of water sufficient for carrying out the procedure. The pancreas and the salivary glands of the lower jaw, preferably of pigs, are preeminently suited to the procedure.

Pankratova, M. Yu.
INCORPORATION OF RADIOACTIVE METHIONINE S^{35} IN THE PROTEINS OF THE BK-8 BLOOD SUBSTITUTE PREPARATION IN VITRO. 3 Mar 59, 8p. (5 figs. omitted) 15 refs. JPRS: L-660-N.
Order from OTS $0.50 59-13227

Trans. of Ukrayins'kyy Biokhimichnyy Zhurnal (USSR) 1958, v. 30, no. 2, p. 212-218.

Rehald, Erich and Hagedorn, Adolf.
PROCEDURE FOR OBTAINING ANTI-ANEMIC AGENTS FROM LIVER. [1959] [6]p. 1ref.
Order from LC or SLA mi$1.80, ph$1.80 59-17861

Trans. of German patent application B 1516 (30h, 2/04) appl. 1 Jan 50, pub. 13 Mar 52, by C. F. Böhringer and Söhne G.m.b.H., Mannheim-Waldof.

Ito, Ko, Inami, Keiji, and Hamanaka, Sho.
METHOD FOR PREPARATION OF STABLE INJECTION SOLUTIONS OF CALCIUM GLUCONATE. 27 Oct 54 [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17846

Trans. of Japanese official patent report Showa 28-4500, 9 Sep 53, appl. 25 Jan 52, spec. appl. Showa 27-994, by Sankyo Co., Ltd., Tokyo, representative: Yasuji Gyomoto.

The methods for stabilization of calcium gluconate injection solutions that have been reported previously are effective in preventing the precipitation of the heat-soluble portion, but they are totally ineffective in preventing precipitation of the heat-insoluble portion, probably formed secondarily from the calcium gluconate. When, on the other hand, calcium glucoheptonate is added during the manufacture of calcium gluconate injection solutions, the latter are thoroughly stabilized so that no precipitate at all is formed even after a lapse of one year; stabilization by the usual methods cannot prevent the formation of heat-insoluble precipitates even one day after manufacture. With regard to the quantity of calcium glucoheptonate to be added, preventive effects are seen from about 0.05 mol per one mol of calcium gluconate. (Extracted from the report)

Chaykovskaya, M. Ya., Sergel', O. S., and Yelpat'yevskaya, G. N.
COMPLEX THERAPY OF RADIATION SICKNESS DURING BLOOD LOSSES. 25 Aug 59, 10p. 12 refs.
JPRS: L-1842-D
Order from OTS $0.50 59-11771

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1959, v. 34, no. 3, p. 47-52.

Animal experiments involving the use of various blood substitutes, antibiotics and vitamins in treatment of radiation sickness complicated by blood loss are reported. The most effective substances tested were the protein hydrolysates "parenterin" and "compound L-103". Belenski's serum was found to be ineffective because assimilation of the proteins which it contains is associated with an increase of residual nitrogen in the blood serum.

Hertwig, Paula.
DIFFERENCES IN THE DEVELOPMENT CAPABILITIES OF F_1 MICE AFTER X-RAYING OF SPERMATOGONIIA AND MATURE AND IMMATURE SPERMATOZOA (Unterschiede in der Entwicklungsfähigkeit von F_1 Mausen nach Röntgen-Bestrahlung von Spermatogonien, Fertigen und Unfertigen Spermatozoen) tr. by D. A. Sinclair. 1959, 48p. 22 refs. Technical trans. 800; C-3002.
Order from NRCC NRCC TT-800

Trans. of Biologisches Zentralblatt (Germany) 1938, v. 58, no. 5/6, p. 273-301.

Kopylova, E. N.
THE EFFECT OF CHRONIC GAMMA IRRADIATION ON THE OVARIES OF MICE, tr. by J. B. Sykes. Jan 59, 14p. (4 figs. omitted) 20 refs. NP-tr-241.
Order from LC or SLA mi$2.40, ph$3.30 59-18831

Manuscript trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1958 [v. 23] no. 5, p. 592-596.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-12677, 9 Jan 59, 9p.

Adult virgin mice weighing 18-20 g were subjected to daily γ radiation of from 0.05-0.4 r for 16 mo. A quantitative decrease of hollow, developing, primordial or atresic follicles was demonstrated, being particularly pronounced in the 0.4-r group. Degenerative changes of ovarian tissues and of follicular apparatus were most marked in the 0.4-r group. In spite of extensive tissue injury to individual ovaries, a number of follicles were structurally normal. Neoplastic growth was not stimulated, although in some cases there was proliferation of germinal epithelium of luteal stomata. Body weight was not affected.

Gaarder, Torbjørn and Bjerkan, Paul.
OYSTERS AND OYSTER CULTURE IN NORWAY 1959, 66p. (48 figs. omitted) 34 refs. Trans. ser. no. 217.
Order from SLA mi$3.90, ph$10.80 59-17694

Trans. of mono. Østers og Østerskultur i Norge, Bergen, 1934.

Contents:
Introduction
The North European oysters
  Structure and biology
  Chemical composition
Hazards of oysters
  Starvation and cold
  Enemies and diseases
Oyster culture
Oyster culture in Norway
  Work to promote oyster culture
  Pools and ponds
  The hydrography of pools and ponds
  Observations that ought to be made in pools and ponds
  Breeding pools and their operation
  Rearing ponds and their operation
  Material used in oyster culture
Norwegian literature on oysters and oyster culture

Pomerantzev, B. I.
BASIC DIRECTIONS OF EVOLUTION OF IXODOIDEA. [1959] 17p. 8 refs. Trans. 13 (T13).
Order from LC or SLA mi$2.40, ph$3.30 59-15898

Trans. of [Akademiya Nauk SSSR] Zool[ogicheskiy] Inst[itut. Trudy] 1948, v. 10, p. 5-18.

Teng, Kuo-Fan.
STUDIES ON THE LIFE-HISTORY OF HAEMAPHYSALIS BISPINOSA NEUM, tr. by Charles A. Liu. 1959, 20p. (1 plate omitted) 38 refs. Trans. 17 (T17).
Order from SLA mi$2.40, ph$3.30 59-15726

Trans. of K'un Ch'ung Hsüeh Pao (Chinese People's Republic) 1956, v. 5, no. 2, p. 166-180.

Varshavskiy, S. N. and Shilov, M. N.
SPRING AND SUMMER FEEDING HABITS OF THE DESERT RAVEN IN THE NORTHERN ARAL TERRITORY (Vesenne-Letnyye Pitaniye Pustynnogo Vorona v Severnom Priaral'ye). 1 June 59, 23p. 5 refs. Trans. V1441.
Order from LC or SLA mi$2.70, ph$4.80 59-18307

Trans. of Zoologicheskiy Zhurnal (USSR) 1958, v. 37, no. 10, p. 1521-1530.

*AKADEMIYA NAUK SSSR. OTDELENIYE KHIMICHESKIKH NAUK. IZVESTIYA, 1959, NO. 5. P. 763-951 (News of the Academy of Sciences of the USSR, Department of Chemical Sciences). [1959] 1v. [SOV]-62-59-5-(1-40)/40.
Order from OTS $0.70, $4.00/6 mo. PB 141 055T-17
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. DIVISION OF CHEMICAL SCIENCE, 1958.
Order from CB $5.00, $45.00/year

No. 7, p. 783-892
No. 8, p. 893-992
No. 9, p. 993-1116
No. 10, p. 1117-1240

Trans. of Akademiya Nauk SSSR. Otdeleniye Khimicheskikh Nauk. Izvestiya, 1958, no. 7, p. 801-[908]; no. 8, p. 917-[1017]; no. 9, p. 1025-[1135]; no. 10, p. 1157-[1281].

JOURNAL OF APPLIED CHEMISTRY OF THE USSR, 1958, VOL. 31, NO. 9, P. 1269-1429. 1959, 1v.
Order from CB $7.50, $60.00/year

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1958, v. 31, no. 9, p. 1281-[1444].

JOURNAL OF GENERAL CHEMISTRY OF THE USSR, 1958, VOL. 28, NO. 8, P. 2043-2345. 1959, 1v.
Order from CB $10.00, $90.00/year

Trans. of Zhurnal Obshchey Khimii (USSR) 1958, v. 28, no. 8, p. 2005-[2307].

LENINGRAD U. VESTNIK (USSR) 1958 [NO. 16] SERIYA FIZIKI I KHIMII, NO. 3 (Herald of Leningrad University, Physics and Chemistry Series). [1959] 1v. SOV-54-58-3-(1-19)/19.
Order from OTS $0.60, $2.25/year PB 141 050T-4
Foreign $0.85, $3.25/year

Consists of abstracts in English.

LENINGRAD U. VESTNIK (USSR) 1959 [NO. 4] SERIYA FIZIKI I KHIMII, NO. 1 (Herald of Leningrad University, Physics and Chemistry Series). [1959] 1v. SOV-54-59-1-(1-25)/25.
Order from OTS $0.60, $2.25/year PB 141 050T-6
Foreign $0.85, $3.25/year

Consists of abstracts in English.

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR. CHEMISTRY SECTION, 1958, VOL. 122, NOS. 1-6, P. 641-775. 1959, 1v.
Order from CB $25.00, $110.00/year

Trans. of Akademiya Nauk SSSR. Doklady. Khimiya 1958, v. 122, nos. 1-6.

USPEKHI KHIMII (USSR) 1959 (Progress of Chemistry). [1959] [14]p.
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 4, p. 369-518, PB 141 070T-18
No. 5, p. 521-646, PB 141 070T-17

Consists of abstracts in English.

*ZHURNAL OBSHCHEY KHIMII (USSR) 1959, V. 29, NO. 4, P. 1049-1401 (Journal of General Chemistry). [1959] 1v. SOV-79-29-4-(1-77)/77.
Order from OTS $1.40, $7.50/6 mo. PB 141 075T-18
Foreign $1.65, $9.00/6 mo.

Consists of abstracts in English.

Fedot'yev, N. P. and Grilikhes, S. Ya.
THE SURFACE CONDITION AND ANODIC POTENTIALS OF COPPER AND NICKEL DURING ELECTROCHEMICAL POLISHING. [1959] 4p.
Order from ATS $7.50 ATS-28L33R

Trans. of *Zhur[nal] Prikład[noy] Khim[ii] (USSR) 1957, v. 30, no. 4, p. 643-645.

Yamashita, Y. and Shimamura, T.
CATALYTIC EFFECT OF TERTIARY AMINES IN ESTERIFICATIONS ACCOMPANIED BY REMOVAL OF SODIUM CHLORIDE. [1959] 11p.
Order from ATS $14.65 ATS-15L33J

Trans. of Kogyo Kagaku Zasshi (Japan) 1957, v. 60, no. 4, p. 423-426.
Another translation is available from SLA mi$2.70, ph$4.80 as 59-20103 [1959] [25]p.

Analytical Chemistry

*ZHURNAL ANALITICHESKOY KHIMII (USSR) 1959, V. 14, NO. 2, P. 147-256 (Journal of Analytical Chemistry). [1959] 1v. SOV-75-14-2-(1-27)/27.
Order from OTS $0.90, $5.25/year PB 141 071T-9
Foreign $1.15, $6.75/year

Consists of abstracts in English.

Bezuglyy, V. D. and Dmitriyeva, V. N.
POLAROGRAPHIC METHOD FOR THE INVESTIGATION OF SOME PLASTICS. [1959] 14p. 23 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-20008

Trans. of *Zavodskaya Laboratoriya (USSR) 1958, v. 24, no. 8, p. 941-947.

Some results of the work done in the laboratory of our plant on the application of polarographic methods to the investigation of various plastics of the acrylate group are described in this paper. We devised methods for the determination of monomers (methyl methacrylate), plasticizers (dibutyl phthalate, salol), as well as benzoyl peroxide and hydroquinone used as the initiator reagents and inhibitors for polymerization, respectively. (Author)

Brodskiy, A. M., Lavrovskiy, K. P. and others.
CHROMATOGRAPHIC ANALYSIS OF MIXTURES OF ALKENES WITH DIOLEFINS. [1959] 4p.
Order from ATS $5.50 ATS-96L33R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959, v. 4, no. 3, p. 30-32.

Drabkin, A. E.
ORGANIC COMPOUNDS OF SULFUR IN OIL SHALE GAS. [1959] 5p.
Order from ATS $11.75 ATS-54L30R

Trans. of Vsesoyuz[nyy] Nauch[no]-Issledovatel'[skiy] Inst[itut po] Pererabotke Slantsev. Trudy (USSR) 1958 [v. 7] no. 6, p. 120-130.

Fratkina, G. P.
QUANTITATIVE DETERMINATION OF ALUMINUM AND TITANIUM IN LOW-PRESSURE POLYETHYLENE BY MEANS OF SPECTROSCOPIC ANALYSIS. [1959] 2p.
Order from ATS $3.20 ATS-14L30R

Trans. of *Zavodskaya Lab[oratoriya] (USSR) 1958, v. 24 [no. 11] p. 1373-1374.

Gribova, E. A. and Levin, E. S.
SIMULTANEOUS DETERMINATION OF SULFURIC ACID AND SULFONIC ACIDS BY TITRATION IN NON-AQUEOUS SOLVENTS. [1959] 6p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-20010

Trans. of *Zavodskaya Laboratoriya (USSR) 1958, v. 24, no. 11, p. 1356-1358.

Solvents were acetonitrile or acetone which had previously been dried over calcined calcium chloride and distilled. Morpholine and diphenylguanidine were used as bases for the titration. The diphenylguanidine was dissolved in ethyl alcohol containing 10 to 15% of glycerol to prevent crystallization of the compound at the tip of the burette end due to evaporation of the solvent. The titer of the solution was determined by titration against 0.1N hydrochloric acid solution in an aqueous medium. All titrations were carried out potentiometrically using a glass electrode as the indicator and the saturated calomel electrode as the reference electrodes. Under these conditions, there are two stages in the titration of sulfuric acid. Two jumps in potential, that is, two equivalent points are observed. The presence of alcohol in the solution strongly suppresses the second dissociation step of sulfuric acid and, the second jump in potential correspondingly appears very small and indistinct in the presence of alcohol. It becomes distinct if the titrated solution is diluted with a double volume of water after the first equivalent point has been passed. Naturally, the potential of the glass electrode changes after such a dilution. In the titration sulfonic acids are neutralized simultaneously with sulfuric acid to their bisulfates. The end point in titrations of sulfonic acids and sulfuric acid to bisulfate corresponds to the first jump in potential. Then the bisulfate itself is titrated and a second jump in potential is observed after the solution has been completely neutralized. The presence of water in the solution analyzed reduces the size of the first break in potential. When the concentration of water exceeds 5 to 7%, the second titration becomes impossible.

Kling, R.
VOLUMETRIC METHOD FOR THE DETERMINATION OF SULFATES IN THE PRESENCE OF CHROMIUM. [1959] 3p.
Order from ATS $5.00 ATS-10L34P

Trans. of Chem[ia] Anal[ityczna] (Poland) 1958, v. 3, p. 817-820.

Komar', N. P.
DISTRIBUTION OF COMPLEX COMPOUND BETWEEN TWO SOLVENTS. 25 Aug 59, 17p. 15 refs. JPRS: L-940-N.
Order from OTS $0.50 59-13832

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1957 [v. 2] no. 5, p. 1015-1024.

It is shown that in the case of only the spectrophotometric investigation of a reagent (weak acid) and of a complex compound which are distributed between two solvents greater calculation difficulties arise than in such investigations in a single-phase system because the break between the sought-for constants and the number of equations which one can set up is always greater for a two-phase system than for a single-phase system. It is established that during simultaneous spectrophotometric and radiometric measurements one can, to a considerable extent, simplify and refine the investigation of the complex and reagent in the two-phase system. Clarification is made of the correct conditions of mixing in the determination of the composition by the method of I. I. Ostromyslenskiy (Ber. 44: 628, 1911) and it is shown possible to make direct determination of the indexes in the indexes in the formula of the complex compound being extracted even in the case in which there is step-wise complex formation in the aqueous phase. (Author)

Lukasiak-Wardzinska, H. and Popowicz, J.
DETERMINATION OF FERRIC IONS BY MEANS OF THE SODIUM SALT OF p-AMINOSALICYLIC ACID. [1959] 3p.
Order from ATS $5.00 ATS-09L34P

Trans. of Chem[ia] Anal[ityczna] (Poland) 1958, v. 3, p. 893-895.

Nazarenko, V. A.
A COLORIMETRIC METHOD FOR THE DETERMINATION OF ZIRCONIUM (Kolorimetricheskii Metod Opredeleniya Tsirkoniya) tr. by J. W. Palmer. Oct 58 [7]p. 7 refs. Library Trans. no. 776; M. 143.
Order from LC or SLA mi$1.80, ph$1.80 59-18753

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1937, v. 10, no. 9, p. 1696-1699.

The colorimetric method of determining zirconium is based on the reaction with p-dimethylaminoazophenylarsenic acid. The method enables amounts of zirconium between 0.02 and 1 mg to be determined. The zirconium is precipitated in a hydrochloric solution by p-dimethylaminoazophenylarsenic acid, and the precipitate after separation from the excess of the precipitant is dissolved by an alkali. The alkali solution of p-dimethylaminoazophenylarsenic acid which is obtained in this way is subjected to colorimetric determination. Elements such as titanium, thorium, cerium, iron, uranium, which are associated with zirconium in the systematic course of the analysis do not hinder the determination.

Nazarenko, V. A.
DETERMINATION OF MICROIMPURITIES IN SEMICONDUCTING MATERIALS AND METALS OF HIGH PURITY. [1959] 16p. 75 refs.
Order from MDF $8.00 MDF N-106

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost'] (USSR) 1959, v. 4, no. 2, p. 235-241.

Plotnikov, V. A. and Yakubson, S. I.
AN ELECTROCHEMICAL INVESTIGATION OF THE SYSTEM $AlBr_3$-$AsBr_3$ IN ETHYL BROMIDE, tr. by J. B. Sykes. 1955 [8]p. 7 refs. A. E. R. E. Lib/Trans 609.
Order from SLA mi$1.80, ph$1.80 59-17526

Trans. of Zhurnal Obshchey Khimii (USSR) 1936, v. 6, no. 11, p. 1694-1697.

Arsenic tribromide in an ethyl bromide solution of aluminum bromide conducts an electric current. The specific electric conductivity decreases as the concentration of $AsBr_3$ increases. The value of the specific conductivity, for a ratio mol $AsBr_3$/mol $AlBr_3$ = 5.8 and a molecular ratio $AlBr_3$: C_2H_5Br = 0.19, is 1.03×10^{-4}. It is approximately one third of that for a similar solution of $AlBr_3$, in ethyl bromide without the addition of arsenic tribromide. As the solution is diluted, the electric conductivity decreases. On electrolysis, arsenic is evolved at the cathode and bromine at the anode. The decomposition potential is 0.69 V. In analogy to the behaviour of this system in benzene, it may be supposed that a desolvation of the aluminum bromide occurs in ethyl bromide also. The process takes place according to the scheme $AlBr_3 . C_2H_5Br + AsBr_3 = AlBr_3 . AsBr_3 + C_2H_5Br$. (Author)

Schanderl, Hugo and Staudenmayer, Theodor.
THE DETERMINATION OF FERMENTED VINEGAR AND SYNTHETIC VINEGAR BY MEANS OF AMINO ACIDS (Unterscheidung von Gärungsessig und Synthetischem Essig durch Aminosäuren), tr. by Marion Fields. Apr 58 [7]p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-20148

Trans. of Zeitschrift für Lebensmittel-Untersuchung und -Forschung (West Germany) 1956, v. 104, no. 1, p. 26-28.

The identification of amino acids with ninhydrin reaction can be used to distinguish fermented vinegar from synthetic vinegar.

Vdovenko, V. M. and Lazarev, L. N.
EXTRACTION METHODS OF SEPARATING ELEMENTS IN ANALYTIC CHEMISTRY. [1959] 11p. 64 refs.
Order from MDF $5.50 MDF V-134

Trans. of Khim[icheskaya] Nauka i Prom[yshlennost'] (USSR) 1959, v. 4, no. 2, p. 230-234.

A literature review.

Zimakov, I. E. and Rozhavskiy, G. S.
MULTIPLE RADIOACTIVE DILUTION METHOD FOR DETERMINING MINUTE IMPURITIES. [1959] 7p.
Order from LC or SLA mi$1.80, ph$1.80 59-20009

Trans. of *Zavodskaya Laboratoriya (USSR) 1958, v. 24, no. 8, no. 922-925.

Inorganic Chemistry

Hund, F. and Peetz, U.
ADDITIONAL FLUORITE PHASES IN THE MIXED OXIDES OF RARE EARTHS WITH URANIUM; INVESTIGATIONS OF THE SYSTEMS La_2O_3, Nd_2O_3, Sm_2O_3, Yb_2O_3, Sc_2O_3 with U_3O_8 (Über Weitere Fluoritphasen in den Mischoxyden Seltener Erden mit Uran; Untersuchangen der System La_2O_3, Nd_2O_3, Sm_2O_3, Yb_2O_3, Sc_2O_3 mit U_3O_8). [1959] [10]p. 14 refs. No. 225.
Order from SLA mi$1.80, ph$1.80 59-17959

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1952, v. 271, no. 1/2, p. 6-16.

In the system lanthanum oxide-uranium oxide there appears a fluorite phase of 33 to 70 mol-% $LaO_{1.5}$, the lattice constant rising from 5.462 to 5.543 kX for the mixed crystal with 68.0 mol-% $LaO_{1.5}$. Toward the side which is rich in lanthanum oxide there

appears the C-type of the sesquioxides, which becomes stable by anomalous mixed crystal formation to 1200° C. The fluorite mixed crystals have an intact cation lattice. In the system neodymium oxide-uranium oxide there appear anomalous mixed crystals of the fluorite type, of 25 to 65 mol-% neodymium oxide; in corresponding concentration sequence the lattice constant changes from 5.423 to 5.437 KX. In the case of high neodymium oxide contents the C-type appears constantly up to 1200° C; the anomalous fluorite mixed crystals also have an intact cation lattice. In the systems of uranium oxide with samarium oxide, ytterbium oxide and scandium oxide, fluorite phases were also observed, and the lattice constants of the 50 mol-% mixed crystals were determined. The individual systems investigated thus far are compared with each other, regularities are pointed out, and the dependence of the color on the composition and on the preparation temperature are described. (Author)

Hund, F. and Peetz, U.
THE FLUORITE PHASE IN THE SYSTEM U_3O_8-Er_2O_3 (Die Fluoritphase im System U_3O_8-Er_2O_3). [1959] [8]p. 26 refs. No. 179.
Order from SLA mi$1.80, ph$1.80 59-17956

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1952, v. 267, no. 4/5, p. 189-197.

In the system U_3O_8-Er_2O_3 there is formed, using the conditions of preparation of the mixed oxides applied by us, a fluorite phase of about 27.0 - 66.7 mol.-% Er_2O_3, the lattice constant determined from Debye-Scherrer photographs dropping from 5.349 ± 0.001 A of the mixed crystal with 26.6 mol.-% Er_2O_3 to 5.303 ± 0.001 A of the mixed crystal which has the highest content of erbium oxide. The densities of the preparations crystallizing in the fluorite lattice were measured at 25°C. The densities for the two missing order types were calculated and compared with the pycnometric densities. The structure of the mixed crystals has an ideal cation lattice with excess anions in the inter-lattice places or with empty places in the anion partial lattice, depending in each case on the composition. From the hypothetical lattice constants extrapolated for the two pure components there evolve structural relationships to the lattice of erbium oxide and to that of the still unknown triuranium octooxide. (Author)

Juza, Robert and Schulz, Werner.
PREPARATION AND PROPERTIES OF THE COMPOUNDS Li_3AlP_2 and Li_3AlAs_2 (Herstellung und Eigenschaften der Verbindungen Li_3AlP_2 und Li_3AlAs_2. [1959] [10]p. 9 refs. No. 226.
Order from SLA mi$1.80, ph$1.80 59-17958

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1952, v. 269, no. 1/2, p. 1-12.

The compounds Li_3AlP_2 and Li_3AlAs_2 were prepared according to three different methods: (1) from an alloy of the composition Li_3Al and phosphorus or arsenic vapor; (2) from the binary phosphides or arsenides of lithium and aluminum; and (3) from lithium-phosphide aluminum and phosphorus. The compounds crystallize in a rhombically deformed superstructure of the CaF_2 lattice with the following lattice constants: a = 11.47, b = 11.61, and c = 11.73 A for Li_3AlP_2; and a = 11.87, b = 11.98, and c = 12.11 A for $LiAlAs_2$. Aside from the rhombic deformation and a change of the parameters, the compounds are isomorphous with the Li_3AlN_2 (space group T_d^7). The rhombic space group is D_{2h}^{27}. The chemical behavior of the two compounds is more closely allied to that of Li_3P and Li_3As, respectively, than to AlP and AlAs. Space-chemical relationships are discussed.

Kieffer, R., Benesovsky, F., and Honak, E. R.
ON A NEW METHOD FOR THE PRODUCTION OF METAL BORIDES OF THE TRANSITION METALS, PARTICULARLY OF TITANIUM AND ZIRCONIUM BORIDE (Über ein Neues Verfahren zur Herstellung von Metallboriden der Übergangsmetalle, Insbesondere von Titan- und Zirkonborid). [1959] [9]p. 26 refs. No. 194.
Order from SLA mi$1.80, ph$1.80 59-17957

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1952, v. 268, no. 3, p. 191-200.

By the reaction of metallic titanium and zirconium, respectively, with boron carbide, with the addition of boric acid anhydride and TiO_2 or ZrO_2, respectively, one can produce low-carbon TiB_2 and ZrB_2. The boron carbide process is suitable for the technical production of metal borides. A few physical properties were determined for hot pressed bodies of TiB_2 and ZrB_2 and compared with the values of other diborides of the transition metals of the 4th, 5th and 6th group of the periodic system. (Author's summary)

Klauber, A[lbert] and Mellenheim, J[ulius] M[ell von]
EXISTENCE OF A GASEOUS HYDRIDE OF THORIUM. [1959] 8p. 82 refs.
Order from SLA mi$1.80, ph$1.80 59-20131

Trans. of Zeitschrift für Anorganische Chemie (Germany) 1920, v. 113, p. 306-316.

Krylov, E. I. and Anan'ina, A. M.
THE SYNTHESES AND PROPERTIES OF TANTALUM HYDRIDES [Sintez i Svoystva Gidridov Tantala]. [1959] 7p. 8 refs.
Order from RIS $16.50 RIS rept. R-765

Trans. of Zh[urnal] Neorg[anicheskoy] Khim[ii] (USSR) 1958, v. 3, no. 8, p. 1727-1730.

The results of reacting tantalum pentachloride with Grignard reagents in hydrogen or nitrogen are presented. New hydrides TaH, TaH_2 and TaH_3, and solid solutions of hydrogen in tantalum, have been produced. (Author).

Laubi, Otto and Briault, Maurice.
PROCEDURE FOR PREPARING POTASSIUM SILICATES. [1959] [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17306

Trans. of French patent 998,481, gr. 13, cl. 3, appl. 11 Oct 45, granted 26 Sep 51, pub. 18 Jan 52, by Societe Bozel Maletra, France (by proxy: Harle and Lechopiez).

A procedure is presented for preparing potassium silicates, which consists basically in heating, preferably in an autoclave, silica or substances containing silica, in the presence of a solution of potassium hydroxide or potassium chloride. The heating is performed at a temperature ranging from 100° to 320°C, the proportion of silica and the solution being such that the ratio SiO_2/K_2O in the reaction mixture is preferably about 4/1. After heating, the resulting product is separated from the surrounding liquid by centrifugation or any other known method, then dehydrated by heating at a temperature of 500°C or higher, after which the dehydrated product so obtained is dissolved in any known manner, either immediately or when the solution is needed to be used.

Morozov, I. S. and Stefanyuk, S. L.
THE KINETICS OF CHLORINATION OF TITANIUM DIOXIDE AND NIOBIUM PENTOXIDE. 12 June 59, 15p. 6 refs.
Order from RIS $30.00 RIS R-762

Trans. of Zh[urnal] Neorg[anicheskoy] Khimii (USSR) 1958, v. 3, no. 10, p. 2366-2374.

A method of studying chlorination kinetics is proposed. The relations of chlorination rate to temperature, to pellet size, to linear flow rate, and to partial pressure of chlorine, have been determined for TiO_2 and Nb_2O_5 mixed with carbon. (Author)

Morozov, N. S. and Toptygin, D. Ya.
THE SOLUBILITY OF FERRIC CHLORIDE AND OF ITS MELTS WITH THE CHLORIDES OF NIOBIUM, ALUMINIUM AND SODIUM IN TITANIUM TETRACHLORIDE. [1959] 10p. 7 refs. M. 103.
Order from LC or SLA mi$1.80, ph$1.80 59-18733

Trans. of [Zhurnal Neorganicheskoy Khimii] (USSR) 1957, v. 2, no. 9, p. 2129-2135.

The system $TiCl_4$ - $FeCl_3$ was studied by the method of thermal analysis. 0.5% of ferric chloride dissolves in titanium tetrachloride at 204°. Less than 0.01% of ferric chloride dissolves at room temperature. Systems $TiCl_4$-$FeCl_3$-$AlCl_3$ and $TiCl_4$-$FeCl_3$-$NbCl_5$ were studied by the method of thermal analysis. The solubility of ferric chloride in titanium tetrachloride increases in presence of aluminium chloride and niobium pentachloride. The system $FeCl_3$-NaCl was studied throughout the entire range of concentrations. The system $TiCl_4$-$FeCl_3$-NaCl was studied. It was found that sodium chloride completely salted ferric chloride out of its solutions in titanium tetrachloride. (Author)

*ZHURNAL NEORGANICHESKOY KHIMII (USSR) 1959, V. 4, NO. 6, P. 1225-1463 (Journal of Inorganic Chemistry). [1959] 1v. [SOV]-78-4-6-(1-44)/44.
Order from OTS $0.80, $4.50/6 mo. PB 141 074T-15
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

Organic Chemistry

PROCESS FOR THE PREPARATION OF OXIME SOLUTIONS FOR REARRANGEMENT. [1959] [5]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17891

Trans. of French patent 871,031, gr. 14, cl. 8, claimed 22 Mar 41, delivered 3 Jan 42, pub. 3 Apr 42, by I. G. Farbenindustrie Aktiengesellschaft, Germany (Patent claim filed in Germany 28 Nov 38) by power of attorney L. Chassevent and P. Brot.

A procedure is described for the preparation of oxime solutions in concentrated sulfuric acid, which oxime solutions are intended for rearrangement. This procedure is characterized by the fact that oxime solutions are mixed in neutral solvents, preferably volatile solvents, with concentrated sulfuric acid and the solvent is eliminated by separation, aspiration or distillation.

Balandin, A. A., Kukina, A. I., and Shishova, D. P.
A STUDY OF IRON-CHROMIUM CATALYSTS IN DEHYDROGENATION AND DEHYDRATION REACTIONS OF ISOPROPYL ALCOHOL [Issledovaniye Zhelezokhromovykh Katalizatorov v Reaktsiyakh Degidrogenizatsii i Degidratatsii Izopropilovogo Spirta]. [1959] 11p.
Order from ATS $13.75 ATS-87L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 4, p. 882-893.

Conix, André.
ISOMERY PHENOMENA IN POLYMERS. [1959] 11p.
Order from SLA mi$2.40, ph$3.30 59-17986

Trans. of Vlaam[se] Chem[ische] Ver[eniging] Mededel[inger] (Belgium) 1958, v. 20, p. 102-113.

Fodor, G., Gerech, A. and others.
MODIFIED SYNTHESIS OF 2-METHYL-4-AMINO-5-ETHOXYMETHYL-PYRIMIDINE. [1959] 15p. 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-20129

Trans. of *Zhurnal Obschey Khimii (USSR) 1951 [v. 21, no. 10] p. 1897-1902.

Hock, Heinrich and Lang, Shon.
CONCERNING THE PEROXIDES OF BENZENE DERIVATIVES (Über Peroxyde von Benzol-Derivaten) tr. by PCC. Communication 9 on Autoxidation of Hydrocarbons (Autoxydation von Kohlenwasserstoffen). 14 Jan 59, 11p. 17 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-12935

Trans. of Chemische Berichte (Germany) 1944, v. 77, p. 257-264.

Ishihara, K. and Inami, K.
AN IMPROVED METHOD OF PREPARATION OF ARSANILIC ACID. [1959] 6p.
Order from LC or SLA mi$1.80, ph$1.80 59-17878

Trans. of Japanese patent 179838, appl. 11 Apr 47, effective 8 Apr 49, pat. 9 Aug 49, issued 30 June 50, by Sankyo Co., Ltd., Tokyo.

In order to improve the reaction between arsenic acid and aniline in the preparation of arsanilic acid, it was found that the addition of Sym-diphenyl-urea resulted in removing water effectively, preventing the oxidation, and supplying necessary aniline during the reaction. The reaction of this improved method takes place smoothly. The product of arsanilic acid is pure. The yield is high. (Extracted from the report)

Jäger, Alfred and Kattwinkel, Günter.
IDENTIFYING SOME HYDROCARBONS IN LOW-TEMPERATURE TAR FROM HARD COALS. [1959] 8p. [figs. part of p. 706 omitted] 21 refs.
Order from SLA mi$1.80, ph$1.80 59-20058

Trans. of Erdöl und Kohle (West Germany) 1955, v. 8 [no. 10] p. 706-711.

Investigations indicate that aliphatics are predominantly formed at temperatures below 600°C. It must be expected, that higher ketones or cycloketones are present and the formation of tar resins is suppressed. (See also 59-20057)

Jäger, Alfred and Kattwinkel, Günter.
ON THE KETONES OF LOW-TEMPERATURE TAR FROM HARD COALS. [1959] 3p. (2 diagr. omitted) 7 refs.
Order from SLA mi$1.80, ph$1.80 59-20057

Partial trans. (Summary, p. 449-450) of Erdöl und Kohle (West Germany) 1956, v. 9 [no. 7] p. 447-450.

Jäger, Alfred and Kattwinkel, Günter.
ON THE NEUTRAL CONSTITUENTS OF LOW-TEMPERATURE TAR FROM HARD COALS, ESPECIALLY IN LIGHT OIL WITH A BOILING RANGE OF 134-188°C. [1959] 3p.
Order from SLA mi$1.80, ph$1.80 59-20056

Partial trans. (summary, p. 362) of Brennstoff-Chem[ie] (West Germany) 1954, v. 35 [no. 23/24] p. 353-362.

Karpukhin, P. P. and Levchenko, A. L.
VINYLATION OF CYCLIC HYDROCARBONS. [1959] 7p.
Order from ATS $7.85 ATS-84L33R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1959, v. 32, no. 6, p. 1354-1359.

Khmelnitskiy, Yu. L., Slepneva, A. T., and Melekhonova, I. I.
THE OXIDATION OF INDUSTRIAL PARAFFIN UNDER THE INFLUENCE OF GAMMA-RADIATION. [1959] 4p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20295

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1959 [v. 4] no. 1 p. 25-[27].

Experiments on the oxidation of industrial paraffin, effected utilizing the gamma radiation of Co^{60} at a temperature of 130° and at a power of dosis ~200 roentgens/sec, established that (1) the reaction velocity in initial period of the paraffin oxidation increases sharply in comparison to that without irradiation, and (2) the reaction velocity at irradiation beyond a determined time is practically unchanged and, consequently, stops to depend on the duration of irradiation.

Knunyants, I. L., Gambaryan, N. P., and Rokhlin, E. M.
CARBENES (COMPOUNDS OF BIVALENT CARBON FORMED AS INTERMEDIATES IN ORGANIC REACTIONS). [1959] 90p.
Order from ATS $86.75 ATS-40L32R

Trans. of Uspekhi Khim[ii] (USSR) 1958, v. 27, no. 12, p. 1361-1436.

Kolesnikov, G. S. and Davydova, S. L.
CARBON-CHAIN POLYMERS AND COPOLYMERS. PT. XIII. SYNTHESIS AND POLYMERIZATION OF SOME UNSATURATED COMPOUNDS CONTAINING GROUP IV ELEMENTS. [1959] 4p.
Order from ATS $7.75 ATS-47L34R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1959, v. 29, no. 6, p. 2042-2045.

Koshkin, N. V.
PREPARATION OF N,N'-DISUBSTITUTED BARBITURIC AND THIOBARBITURIC ACIDS. [1959] 9p.
Order from ATS $11.80 ATS-88L34R

Trans. of Zhur[nal] Obshchey Khim[ii] (USSR) 1935, v. 5, no. 10, p. 1460-1467.

Kruglyakova, K. Ye. and Emanuel', N. M.
SOME FEATURES OF THE BEHAVIOR OF MOLECULAR INTERMEDIATES IN THE OXIDATION OF PROPANE [Osobennosti Povedeniya Molekulyarnykh Promezhutochnykh Veshchestv pri Okislenii Propana]. [1959] 9p.
Order from ATS $7.50 ATS-16L33R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 3, p. 417-424.

Maki, M.
DIRECT SYNTHESIS OF METHYL ACRYLATE FROM ACETYLENE. [1959] 8p.
Order from ATS $12.65 ATS-93L33J

Trans. of Nenryo Kyokai-Shi (Japan) 1953, v. 32, p. 414-419.

Mikhaylov, B. M., Vaver, V. A., and Bubnov, Yu. N.
ORGANOBORON COMPOUNDS. REACTIONS OF TRIALKYLBORONS WITH COMPOUNDS CONTAINING ACTIVE HYDROGEN. [1959] 5p.
Order from ATS $6.00 ATS-57L33R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 126, no. 3, p. 575-578.

Mikhaylov, B. M. and Shchegoleva, T. A.
SYNTHESIS OF BORONTRIALKYLS WITH FUNCTIONAL SUBSTITUENTS [Sintez Bortrialkilov s Funktsional'nymi Zamestitelyami]. [1959] 3p.
Order from ATS $5.25 ATS-55L34R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 3, p. 546-547.

Minsker, K. S. and Etlis, V. S.
CHLORINATED POLYPROPYLENES [Khlorirovannyye Polipropileny]. [1959] 4p.
Order from ATS $5.50 ATS-62L31R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 123, no. 6, p. 1041-1043.

Morozov, I. S. and Korshunov, B. G.
THERMODYNAMICS OF CHLORINATION OF OXIDES OF RARE EARTH METALS BY GASEOUS CHLORINE. [1959] 4p. (2 figs. omitted) 4 refs.
Order from LC or SLA mi $1.80, ph $1.80 AEC-tr-3734

Trans. of A[k]ad[emiya] Nauk SSSR. Doklady, 1958, v. 119, no. 3, p. 523-525.

Previous research (Khim. Redkidh Elementov, Akad. Nauk SSSR Inst. Obschei i Neorg. Khim. 2: 102, 1955; and Zhur. Neorg. Khim. 1: 2606, 1956) was continued by investigating the equilibrium of the reactions $4MeCl_3(s) + 3O_2(g) \rightleftarrows 2Me_2O_3(s) + 6Cl_2(g)$, where Me stands for Sc, La, Nd, and Sm. The equilibrium composition of the mixture of gases was determined statistically by using a capillary to withdraw a sample of gas from the space above the mixture of oxide and chloride. The method described by V. I. Smirnov and A. I. Tikhonov (Izvest. Akad. Nauk SSSR Otdel. Tekh. Nauk 1956: 48) was used to create an excess of chlorine in the gaseous phase as compared with the equilibrium content. The chloride, placed in the oven in an atmosphere of oxygen, was heated 50° to 80° above the temperature of the reaction. The temperature was then lowered to the required level when the pressure equaled that of the system. Chloride-oxygen equilibrium was reached in 3 to 5 days, according to the temperature. Chlorination of oxides and oxidation of metallic chlorides proceed without intermediate products. The chlorination of the oxides of Sc, La, Nd, and Sm at 400°C resulted in $ScCl_3$, $LaCl_3$, $NdCl_3$, and $SmCl_3$ with the ratio Me:3Cl equal to 0.421, 1.30, 1.32, and 1.40, respectively, as compared with theoretical figures of 0.424, 1.30, 1.36, and 1.42. Changes in the free energy, calculated with the aid of the formula $\Delta Z = -RT\ln K$, are tabulated. The average values of heat effects, calculated in accordance with the isochore equation for the reaction $\log K_{T_2} - \log K_{T_1} = (\Delta H/2.303R)(1/T_1 - 1/T_2)$, were +24580, +25230, +25700, and +25520 cal. (See also 59-18734)

Natta, G., Mazzanti, G. and others.
PREPARATION AND STRUCTURE OF LINEAR HIGH POLYMERS OF 1-HEXYNE. [1959] 25p.
Order from ATS $29.45 ATS-11L33I

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1959, v. 89, no. 11, p. 465-494.

Nesmeyanov, A. N. and Perevalova, E. G.
NEW AROMATIC SYSTEMS. I. FERROCENE AS AN AROMATIC SYSTEM (Novyye Aromaticheskiye Sistemy. I. Ferrotsen kak Aromaticheskaya Sistema). [1959] [47]p. 124 refs. F-TS-9697/V.
Order from OTS $1.25 59-21177

Trans. of Khimicheskaya Nauk[a] i Promyshlennost' (USSR) 1958, v. 3, no. 2, p. 146-158.

This article sets forth methods for obtaining ferrocene, structural characteristics, and its physical and chemical properties. (Extracted from the report)

Oda, R., Tokiura, S. and others.
SYNTHESES OF CONDENSATION AND ADDITION POLYMERS. II. SYNTHESES OF HIGH POLYMERS CONTAINING TWO DIFFERENT LINKAGES BY POLYADDITION OR POLYADDITION-CONDENSATION. [1959] 11p.
Order from ATS $15.65 ATS-09L33J

Trans. of Kobunshi Kagaku (Japan) 1959, v. 16, p. 260-266.

See also 59-19822

Oda, R., Tokiura, S. and others.
SYNTHESES OF CONDENSATION POLYMERS AND ADDITION POLYMERS. III. SYNTHESES OF POLYMERS HAVING REGULARLY REPEATING GROUPS BY POLYCONDENSATION (PT. I). [1959] 8p.
Order from ATS $11.75 ATS-14L34J

Trans. of Kobunshi Kagaku (Japan) 1959, v. 16, p. 266-270.

See also 59-19659

Polyakova, A. M., Vereshchagin, L. F. and others.
THE STUDY OF THE INFLUENCE OF PRESSURE ON THE REACTION OF POLY-CONDENSATION OF METHYLGLYCINE ESTER. [1959] 17p. 15 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-20292

Trans. of *Akademiya Nauk SSSR. Otdeleniye Khimicheskikh Nauk. Izvestiya, 1954, no. 1, p. 142-148.

An investigation of the reaction of polycondensation of the methyl ester of aminoacetic acid was conducted under a pressure of 4500 atm at room temperature and at 50°, 75° and 130°C. A stimulating action of high pressure on the rate of the reaction and the depth of the polycondensation of the methyl ester of aminoacetic acid was established. An influence of the temperature on the process of polycondensation of methylglycine ester under pressure was shown. An attempt to determine the structures of the products of polycondensation under pressure of the methyl ester of aminoacetic acid was made. (Author)

Popova, N. I. and Vermel', Ye. Ye.
CHANGE IN THE CHEMICAL COMPOSITION AND ACTIVITY OF COPPER CATALYSTS IN THE PROCESS OF OXIDIZING PROPYLENE TO ACROLEIN [Ob Izmenenii Khimicheskogo Sostava i Aktivnosti Mednykh Katalizatorov v Protsesse Okisleniya Propilena a Akrolein]. [1959] 5p.
Order from ATS $5.00 ATS-33L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 124, no. 4, p. 842-845.

Popov, E. M., Matryukova, T. A., and others.
VIBRATION SPECTRA OF ORGANOPHOSPHORUS COMPOUNDS. THE PROBLEM OF CHARACTERIZATION OF THE P=S FREQUENCY. [1959] 10p.
Order from ATS $9.75 ATS-26L34R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1959, v. 29, no. 6, p. 1998-2006.

Shostakovskiy, M. F., Prilezhayeva, Ye. N., and Tsimbal, L. V.
THE SYNTHESIS AND TRANSFORMATIONS OF VINYL ETHERS OF HIGHER POLYATOMIC ALCOHOLS AND CELLULOSE. II. VINYL ETHERS BASED ON CELLULOSE. [1959] 9p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20227

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1956, v. 26 [no. 3] p. 739-745.

The feasibility of synthesizing vinyl ethers of cellulose was demonstrated by the reaction of alkali (potassium) cellulose with acetylene in dioxan medium. Vinyl ethers of strongly degraded cellulose were obtained with degree of etherification 1.3 to 2.3 and in an overall yield of 65 to 80%. In order to determine the degree of substitution of the cellulose vinyl ethers, a method was developed for their quantitative hydrolysis in acid medium. (Author's summary) (Chemistry--Organic)

Skwarski, Thaddeus.
INVESTIGATION OF THE KINETICS OF THE POLYCONDENSATION OF TEREPHTHALIC ACID DIMETHYL ESTER WITH ETHYLENE GLYCOL. I. [1959] [32]p. 18 refs.
Order from SLA mi$3.00, ph$6.30 59-15465

Trans. of Chemia (Poland) 1956, v. 4, no. 12, p. 41-65.

The second stage of the process, i.e., the polycondensation proper, was investigated from the kinetics view point. The investigations were based on the determination of the amount of the formed byproduct, i.e., of the glycol during the polycondensation. The degree of the reaction progress was calculated from the amount of the formed glycol and this method permitted to define the reaction as a third degree reaction. The constant of the reaction rate was calculated and the effect of the temperature and the pressure on the course of the process were investigated. (Author)

Thiele, Johannes.
ON SOLID BUTADIENE DIBROMIDE. Contribution no. 12 to the Knowledge Concerning Unsaturated Chemical Compounds (Zur Kenntnis der Ungesättigten Verbindungen). [1959] [7]p. 20 refs.
Order from SLA mi$1.80, ph$1.80 59-20275

Partial trans. (p. 337-343) of Justus Liebigs Annalen der Chemie (Germany) 1899, v. 308, p. 333-343.

Tolstopyatova, A. A. and Balandin, A. A.
CATALYTIC PROPERTIES OF CERIUM DIOXIDE IN THE DEHYDROGENATION AND DEHYDRATION OF ALCOHOLS AND IN THE DEHYDROGENATION OF CYCLOHEXANE (Kataliticheskiye Svoystva Dvuokisi Tseriya v Otnoshenii Reaktsiy Degidrogenizatsii i Degidratatsii Spirtov i Degidrogenizatsii Tsiklogeksana) [1959] 13p.
Order from ATS $17.50 ATS-45L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 8, p. 1831-1841.

Topchiyev, A. V., Krentsel', B. A. and others.
POLYMERIZATION OF ETHYLENE OVER A CHROMIUM OXIDE CATALYST AT ATMOSPHERIC PRESSURE AND IN THE ABSENCE OF SOLVENT [Polimerizatsiya Etilena na Okisnokhromovom Katalizatore pri Atmosfernom Davlenii i v Otsutstviye Rastvoritelya]. [1959] 2p.
Order from ATS $3.00 ATS-96L32R

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1959, no. 2, p. 365-366.

Tyuryayev, I. Ya., Mukhina, T. N. and others.
THE RATE OF REACTIONS IN THE DEHYDROGENATION OF PROPANE ON A FIXED CATALYST (Skorost' Reaktsiy pri Degidrirevanii Propana na Nepodvizhnom Katalizatore). [1959] 9p.
Order from ATS $10.05 ATS-44L30R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1958, v. 3, no. 12, p. 9-15.

Ziegler, K., Holzkamp, E. and others.
COMPLEX ORGANIC COMPOUNDS OF ALUMINUM. [1959] 2p.
Order from ATS $2.00 ATS-24L34G

Trans. of Angew[andte] Chem[ie] (West Germany) 1955, v. 67, no. 7, p. 213-214.

Physical Chemistry

AKADEMIYA NAUK ESTONSKOY SSR. IZVESTIYA. SERIYA TEKHNICHESKIKH I FIZIKO-MATEMATICHESKIKH NAUK, 1959 (News of the Academy of Sciences of the Estonia SSR. Technical and Physiocomathematical Sciences Series). [1959] [9]p.
Order from OTS $0.60, $2.25/year
Foreign $0.95, $3.25/year

No. 1, p. 3-67, and Suppl. p. 1-16, PB 141 018T-5
No. 2, p. 71-138, PB 141 018T-6

Consists of abstracts in English.

COLLOID JOURNAL, 1958, VOL. 20, NO. 5, P. 483-635. 1959, 1v.
Order from CB $20.00, $80.00/year

Trans. of Kolloidnyy Zhurnal (USSR) 1958, v. 20, no. 5, p. 515-[679].

PROCEEDINGS OF THE ACADEMY OF SCIENCES OF THE USSR. PHYSICAL CHEMISTRY SECTION, 1958, VOL. 121, NOS. 1-6, P. 485-615. 1959, 1v.
Order from CB $35.00, $160.00/year

Trans. of Akademiya Nauk SSSR. Doklady. [Fizicheskaya Khimiya] 1958, v. 121, nos. 1-6.

ZHURNAL FIZICHESKOY KHIMII (USSR) 1959, V. 33, NO. 4, P. 745-957 (Journal of Physical Chemistry). [1959] 1v. [SOV]-76-33-4-(1-32)/32.
Order from OTS $1.10, $6.00/6 mo. PB 141 072T-17
Foreign $1.35, $7.50/6 mo.

Consists of abstracts in English.

Ageno, Mario and Querzoli, Ruggero.
ON FLUORESCENCE EXCITED BY ALPHA PARTICLES IN SOLUTIONS (Sulla Fluorescenza Destata da Particelle Alfa nelle Soluzioni). [1959] [4]p. (2 figs. omitted) 3 refs. No. 190.
Order from SLA mi$1.80, ph$1.80 59-17961

Trans. of Accademia Nazionale dei Lincei. [Classe di Scienze Fiziche, Matematiche e Naturali. Rendiconti] (Italy) 1951, ser. 8, v. 11 [no. 5] p. 265-267.

Experiments are described that demonstrate that the light of fluorescence is not emitted by the direct action of α particles on the molecules in solution. Part of the energy given off to the solution by the α (particles) travels over a distance of the order of a few millimeters across this solution before transforming itself into the radiation of fluorescence which has been noted. Thus the mechanism of the transfer is substantially as supposed by M. Kasha, namely the emission of an ultraviolet radiation strongly reabsorbed in the liquid and exciting normal fluorescence.

Bachem, Ch.
THE COMPRESSIBILITY OF ELECTROLYTIC SOLUTIONS [1959] 28p.
Order from ATS $40.45 ATS-79L33G

Trans. of Z[eitschrift für] Physik (Germany) 1936, v. 101, no. 9/10, p. 541-577.

Bagno, Odette.
ON THE PRECIPITATION OF NICKEL HYDROXIDE BY MIXTURES OF SODIUM HYDROXIDE AND SODIUM CARBONATE. [1959] [3]p. (3 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-20257

Trans. of [Academie des Sciences, Paris.] Comptes Rendus (France) 1953, v. 236 [no. 12] p. 1275-1278.

Baramboym, N. K.
EFFECT OF THE NATURE OF THE GAS MEDIUM ON THE MECHANICAL DESTRUCTION OF POLYMERS (Vliyaniye Kharaktera Gazovoy Sredy na Mekhanicheskuyu Destruktsiyu Polimerov]. [1959] 6p.
Order from ATS $9.00 ATS-64L31R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 5, p. 1049-1054.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-20290 [1959] 10p.

Baramboym, N. K.
THE EFFECT OF THE TYPE OF THE GASEOUS MEDIUM ON THE MECHANICAL DESTRUCTION OF POLYMERS, tr. by L. M. [1959] 10p. (9 figs. omitted) 8 refs. No. 8686b.
Order from LC or SLA mi$1.80, ph$1.80 59-20290

Trans. of Zhurnal Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 5, p. 1049-1054.

The velocity of the mechanical destruction of saturated carbo- and hetero-chain polymers is greater in air than in an atmosphere of nitrogen. The products of the mechanical destruction of the polymer in air differ with respect to their physico-chemical and mechanical properties from products of destruction in nitrogen. Oxygen appears in this case to act as an acceptor of the free radicals which develop during the destruction. (Author)

Bogolyubov, V. E. and Shamayev, Yu. M.
AN ELECTROLYTIC TANK WITH WALLS HAVING THE LEAST AMOUNT OF DISTORTION (Elektroliticheskaya vanna s Minimal'no Iskazhayushchimi Stenkami). 17 Feb 54 [14]p. 9 refs. (foreign text included) M-V. Trans. no. 2057; M. 34.
Order from LC or SLA mi$2.40, ph$3.30 59-18657

Trans. of Elektrichestvo (USSR) 1954, no. 10, p. 68-72.

The reflections of a field from the walls of an electrolytic tank often bring about substantial distortions in the field in question. A method of rational selection of the relationships between the conductivities of the electrolyte and the walls of the tank is suggested. (Metropolitan-Vickers abstract)

Bruun, H. H.
THE SURFACE BALANCE TECHNIQUE AND THE MOLECULAR STRUCTURE OF ABIETIC AND PIMARIC ACIDS (Ytvagsmetodiken Och Hartssyrornas Molekylstruktur) tr. by H. A. G. Nathan. 1958, 27p. 26 refs. Technical trans. 785.
Order from NRCC NRCC TT-785

Trans. of Finska Kemists[amfundets] Medd[elanden] 1954, v. 63, p. 22-41.

A lecture before the Annual Meeting of the Finnish Chemical Society, Helsinki, December 12th, 1953.

Davtyan, O. K.
A STUDY OF SOLID ELECTROLYTES FOR GAS CELLS. [1959] 11p.
Order from CCT $34.00 CCT-518TT

Trans. of [Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya] 1946, no. 1, p. 107-114.

A study was made of the ionic conductivities of mixtures of sodium carbonate, Ural monazite sand (containing up to 3 or 4% ThO_2 and up to 15 to 20% cerite earths), soda glass, tungstic oxide (WO_3), calcium oxide, quartz, and clay (Chasov'iarskii). The materials were ground to very fine powders; a mixture of the required composition was prepared from these powders and compressed into fine cylinders under pressure. These cylinders were dried at a temperature of 200°C for 5 hr, cooled, and their ends covered with a thin layer of graphite. Current was supplied by means of platinum plates pressed firmly to the ends of the cylinder. The whole system was introduced into a special pot furnace which was gradually heated. At low temperatures the electrical conductivity of all the systems was negligible. With an increase in the temperature the electrical conductivity of the systems was very much increased, which indicates the purely ionic nature of the electrical conductivity. The relationship between the electrical conductivity and the temperature for all the systems was of the form $\sigma = Ae^{(-B/T)}$, where σ represents specific electrical conductivity, and A and B are constants.

Debye, P.
ON THE THEORY OF THE CLUSIUS SEPARATION PROCESS (Zur Theorie des Clusiusschen Trennungsverfahrens). [1959] [18]p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-20164

Trans. of Annalen der Physik (Germany) 1939, 5 folge, v. 36, p. 284-294.

Dobrovol'skiy, S. V. and Polotnyuk, V. Ya.
THE KINETICS OF CONSECUTIVE REACTIONS IN A RECYCLE-FLOW SYSTEM [O Kinetike Posledovatel'nykh Reaktsiy v Protochnotsirkulyatsionnoy Sisteme]. [1959] 6p.
Order from ATS $7.20 ATS-11L31R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 12, p. 2792-2796.

Euler, H. von and Zimmerlund, G.
THE ADSORPTION OF SALTS AT THE SURFACES OF METALS. [1959] [16]p. 14 refs. AERE Lib/Trans. 456.
Order from SLA mi$2.40, ph$3.30 . 59-17317

Trans. of Arkiv för Kemi (Sweden) 1921, v. 8, no. 14, p. 1-23.

In addition to the measurements on gold surfaces, some investigations with mercury and its salts are communicated, since they yield the first orientation for an investigation of the equilibrium: liquid mercury = mercury salt solution. (Extracted from the report)

Fetting, F. and Wicke, E.
STOPPAGE OF RAPID REACTIONS IN FLUIDIZED-SOLIDS BEDS, tr. by A. B. [1959] 27p. (11 figs. omitted) 10 refs.
Order from SLA mi$2.70, ph$4.80 59-20281

Trans. of Chem[ie]-Ing[enieur]-Technik (West Germany) 1956, v. 28, no. 2, p. 88-93.

With the aid of acetylene formation in CH_4/O_2 flames as an example, a study was made of the question to what extent a fluidized-solids bed with its high heat-transfer capacity is in a position to intercept intermediate products from a multistage gas reaction. The flame reaction was effected in burners immersed from above into the fluidized-solids bed, so that the hot flue gases were intensively quenched by direct contact with the colder fluidized-solids bed. The effects of the fresh-gas composition and of the burner design, of fresh-gas preheating and of the temperature of the fluidized-solids bed, of the cooling rate of the hot flue gases and of the state of motion of the fluidized-solids bed upon the acetylene yield were investigated, partially on the basis of the work of H. Sachsse and E. Bartholome on acetylene burners. The maximum yield of acetylene obtained (in addition to hydrogen) corresponded to 26-28% of the total converted methane. (Author)

Fink, H. Paul and Korner, Hermann.
MEASUREMENTS OF THE TIME CHARACTERISTIC OF THE HEATING EFFECT IN A CONTACT DUE TO A SUDDENLY ESTABLISHED CURRENT, tr. by R. J. Richardson. 1955 [19]p. 8 refs. A. E. R. E. Lib/Trans. 573.
Order from SLA mi$2.40, ph$3.30 59-17507

Trans. of Wissenschaftliche Veröffentlichungen [aus den] Siemens-Werk[en] (Germany) 1940, v. 19, no. 1, p. 280-290.

Measurements have been carried out which lend experimental support to a theory developed by R. Holm (Arch. Elektrotech. 29: 207, 1935) on the time characteristic of heating effect in a contact due to a suddenly established current. As the exact mathematical treatment of this problem gives rise to very great difficulties which have not up till now been solved it was necessary to test experimentally the simplifications made in the Holm theory, with respect to the results. It appeared that the simplifications made there in regard to the graphite contact investigated are thoroughly permissible so that the theory was in general agreement with the experimental results. (Author's summary).

Gartner, K. and Griessbach, R.
SURFACE BEHAVIOR OF THERMALLY AGED SILICA GELS. [1959] 8p.
Order from ATS $10.85 ATS-32L33G

Trans. of Kolloid-Z[eitschrift] (West Germany) 1959, v. 164, no. 1, p. 8-13.

Gerasimov, V. V.
THE CALCULATION OF CATHODIC PROTECTION TAKING INTO ACCOUNT THE INTERACTION OF FIELDS IN THE ELECTROLYTE. [1959] 4p.
Order from ATS $6.65 ATS-31L34R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1958, v. 31, no. 6, p. 946-948.

Gonikberg, M. G.
APPLICATION OF HIGH PRESSURES TO THE INVESTIGATION OF THE MECHANISM OF CHEMICAL REACTIONS. [1959] [20]p. 50 refs. M. 140.
Order from LC or SLA mi$2.40, ph$3.30 59-18750

Trans. of Uspekhi Khimii (USSR) 1955, v. 24, p. 14-31.

The theory of the effect of high pressure on the equilibria and rates of chemical reactions is briefly given. This theory is then applied to the results of certain experimental investigations of chemical reactions at high pressure, and is found to throw some light on their mechanisms. Reactions dealt with include thermal and catalytic cracking of paraffins, destructive hydrogenation of aromatic hydrocarbons, addition of alkyl halides to tertiary amines or pyridine in acetone, thermal polymerization of styrene, and isotopic ion-exchange reactions. (Author)

Gorbunova, K. M. and Sutyagina, A. A.
THE BRIGHTNESS OF ELECTROLYTIC DEPOSITS AND ITS RELATION OF THE INTERNAL AND EXTERNAL STRUCTURE OF THE DEPOSIT [K Voprosu o Bleske Elektroliticheskikh Osadkov i Svyazi Yego s Vnutrennim i Vneshnim Stroyeniyem Osadka]. [1959] 8p.
Order from ATS $10.80 ATS-34L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 4, p. 785-790.

Guastalia, J.
INVESTIGATIONS ON ELECTRO-ADSORPTION. [1959] 5p.
Order from ATS $6.75 ATS-00L34F

Trans. of Mem[orial des] Serv[ices] Chim[iques de l'']Etat (France) 1956/1957, v. 41, no. 7, p. 317-322.

Hein, Fr. and Albert, P. W.
ALUMINUM TRIETHANOLAMINATE $Al(OC_2H_4)_3N$ AND ITS BEHAVIOR IN COORDINATION. [1959] 8p.
Order from ATS $9.65 ATS-22L32G

Trans. of Z[eitschrift fur] Anorg[anische] Chem[ie] (East Germany) 1952, v. 269, p. 67-75.

Heinz, W.
A NEW CONSISTOMETER AND A NEW ELECTRICAL ROTATIONAL VISCOMETER. [1959] 14p. 5 refs.
Order from SLA mi$2.40, ph$3.30 59-20315

Trans. of Kolloid-Zeitschrift (West Germany) 1956, v. 145, no. 2, p. 119-125.

A consistometer is described which resembles the Höppler consistometer in its external construction. New measurement bobs that, by rotating, produce a capillary flow in the substance under study, permit the performance of absolute measurements, i.e., measurements of pure material constants. It is assumed that the substances have no material time dependence in their rheological behavior. The theoretical principles of these measurement bobs are stated for any number of capillaries. A new rotation viscometer is described in which a flexible shaft permits several selective angular velocities and which is connected to a measuring head. The viscosity-dependent rotational moment transmitted to a bob rotating in the viscous substance is measured or recorded electrically. Various arrangements are possible to suit different problems. Measurement of yield values is also possible. (Paper presented at the 5th session of the German Rheological Society, Frankfurt a. M. May 17-18, 1955.)

Herwig, H. U. and Jenckel, E.
THE BEHAVIOR OF HIGH POLYMERS TOWARDS DIRECT CURRENT. [1959] 23p.
Order from ATS $22.40 ATS-42L33G

Trans. of Z[eitschrift für] Elektrochem[ie] (West Germany) 1959, v. 63, no. 3, p. 360-373.

Heumann, Th. and Diekotter, F. W.
THE PASSIVATION OF CHROMIUM IN DILUTE SULFURIC ACID. [1959] 7p.
Order from ATS $12.20 ATS-25L33G

Trans. of Z[eitschrift für] Elektrochem[ie] (West Germany) 1958, v. 62, no. 6/7, p. 745-750.

Hirota, Kozo, Sakuyama, Shigiru, and Meshitsuka, Gisape Y.
THE EFFECTS OF GAMMA RAY IRRADIATION ON A SOLID CATALYST. [1959] 8p. 2 refs. NP-tr-223.
Order from LC or SLA mi$1.80, ph$1.80 59-17268

Trans. of Nihon Kagaku Zasshi (Japan) 1957, v. 78, no. 7, p. 981-982.

The action of vanadium as a catalyst in the oxidation of SO_2 gas tended in general to deteriorate when it was irradiated with γ-rays.

Kabanov, B. N. and Leikis, D. I.
INVESTIGATION OF THE PASSIVITY OF METALS THROUGH MEASUREMENTS OF THE ELECTRODE IMPEDANCE AT HIGH FREQUENCIES. [1959] 6p.
Order from ATS $9.85 ATS-22L33G

Trans. of Z[eitschrift für] Elektrochem[ie] (West Germany) 1958, v. 62, no. 6/7, p. 660-663.

Kaliko, M. A., Nikitin, Yu. S., and Fedotova, T. V.
THE EFFECT OF THE CONDITIONS OF PREPARING SILICA AND ALUMINA HYDROGELS ON THE STRUCTURE AND ACTIVITY OF MIXED SILICA-ALUMINA CATALYSTS [Vliyaniye Usloviy Prigotovleniya Gidrogeley Okisi Kremniya i Okisi Alyuminiya na Strukturu i Aktivnost' Smeshannykh Alyumosilikatnykh Katalizatorov]. [1959] 8p.
Order from ATS $12.40 ATS-51L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1959, v. 33, no. 4, p. 922-929.

Kaliko, M. A. and Pervukhina, M. N.
STUDY OF THE NATURE OF SURFACE ON CRACKING CATALYSTS BY THE METHOD OF ADSORPTION OF TAGGED CESIUM. [1959] 8p. 13 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20294

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1959 [v. 4] no. 1, p. 35-[40].

The adsorption of cesium ions from cesium-sulfate and -acetate solutions is shown to occur nonselectively on the catalysts. In some catalysts the adsorption on the catalytically inactive part of the catalyst surface occurs simultaneously with the blocking of the active part. Exchange desorptive curves show that only an insignificant part of the total surface of catalyst belongs to the catalytically active centers.

Klein, O. and Lange, E.
NORMAL VOLTA POTENTIALS $\Delta\psi_0$ OF ELECTROCHEMICAL TWO-PHASE SYSTEMS ALONG WITH A CONTRIBUTION TO THE TIME-DEPENDENT CHANGES OF THE SURFACE STRUCTURE OF HIGHLY CONCENTRATED ELECTROLYTE SOLUTIONS. [1959] 10p.
Order from ATS $16.20 ATS-27L33G

Trans. of Z[eitschrift fur] Elektrochem[ie] (Germany) 1938, v. 44, no. 8, p. 562-568.

Kondrat'yev, V. N.
KINETICS OF CHEMICAL GAS REACTIONS. [1959] 8p.
Order from MDF $4.00 MDF K-168

Trans. of table of contents and forward of unidentified mono., Moscow, 1958.

Korneychuk, G. P. and Stukanovskaya, N. A.
METHODS OF SEALING SAMPLES WHEN STUDYING THE KINETICS OF CATALYTIC PROCESSES BY THE DIAPHRAGM METHOD. [1959] 3p.
Order from ATS $4.65 ATS-88L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1957, v. 31, no. 9, p. 2138-2139.

Koshevnik, A. Yu., Kusakov, M. M., and Lubman, N. M.
THE INFLUENCE OF SURFACE ACTIVE SUBSTANCES ON THE MOTION OF GAS BUBBLES IN HYDROCARBON LIQUIDS [Vliyaniye Poverkhnostnoaktivnykh Veshchestv na Dvizheniye Gazovykh Puzyr'kov v Uglevodorodnykh Zhidkostyakh]. [1959] 8p.
Order from ATS $13.65 ATS-30L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1959, v. 33, no. 1, p. 197-203.

Kuzmich, V. I. and Fisher, I. Z.
THEORY OF THE SEPARATION OF A GASEOUS MIXTURE UNDER HIGH PRESSURES (K Teorii Rassloyeniya Gazovoy Smesi pri Vysokikh Davleniyakh). July 59 [13]p. 6 refs. RTS no. 1038.
Order from LC or SLA mi$2.40, ph$3.30 59-18950

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1958, v. 32, no. 2, p. 291-297.

The general theory developed by V. I. Kuzmich and I. Z. Fisher (Zhur. Fiz. Khim. 32: 93, 1958; for abstract of this article see PB 141 072T-1) of the stability limit in a homogeneous multi-component system was applied to an actual system consisting of a mixture of two kinds of hard spheres the "mutual diameter" of which exceeds the mean arithmetic value of the individual diameters of the particles of different kind. The numerical solution of the equations of the stability limit leads to separation curves in the P - n diagram of the system which agree qualitatively with

the results of known experiments on the separation of gas mixtures at high pressures. This qualitative agreement applies also in relation to the variation of the separation curve with temperature. (Author)

Liempt, J. A. M. van.
ON THE DIAGRAM OF STATE OF CARBON (Zur Kenntnis des Zustandsdiagrammes des Kohlenstoffs). [1959] [2]p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-17990

Trans. of Chemisches Zentralblatt (Germany) 1921, v. 92, no. 3, p. 1498.

A book review.

Markov, B. F. and Panchenko, I. D.
DIAGRAMS OF PHASE TRANSFORMATIONS OF $RbCl-MgCl_2$ AND $CsCl-MgCl_2$. 18 Sep 59, 6p. 5 refs. Pa 2896.
Order from LC or SLA mi$1.80, ph$1.80 59-20180

Trans. of Ukrainskiy Khimicheskiy Zhurnal (USSR) 1954, v. 20, p. 620-625.

Phase diagrams for the binary systems $RbCl - MgCl_2$ and $CsCl - MgCl_2$ were studied by the visual-polythermic method. The system $RbCl-MgCl_2$ formed two congruently soluble double salts: $MgCl_2$. RbCl and $MgCl_2$. 2RbCl. The system $MgCl_2 - CsCl$ formed three congruent double salts: $MgCl_2$. CsCl, $MgCl_2$. 2CsCl, $MgCl_2$. 3CsCl and an incongruently melting CsCl. $3MgCl_2$ complex. A definite regularity in diagram changes was observed when passing from $KCl - MgCl_2$ to $RbCl - MgCl_2$ and $CsCl - MgCl_2$: the crystallization of compounds extends over a greater range of composition, the crystallization temperatures of compounds also gradually increases.

Nikolayev, N. E. and Buslayev, Yu. A.
SOLUBILITY ISOTHERM AT 0° FOR THE SYSTEM $HF-CrO_3-H_2O$. [1959] 5p. (2 figs. omitted) 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3733

Trans. of Akad[emiya] Nauk SSSR. Sektor Fiz[iko]-Khim[icheskogo] [Analiza]. Izvest[iya] 1955, v. 26, p. 270-274.
Another translation is available from ATS $7.80 as ATS-29L29R [1958] 6p.

The solubility isotherm for the system $HF-CrO_3-H_2O$ at 0° was studied within the concentration range of HF from 0 to 100%. Solid phases corresponding to CrO_3 and CrO_2F_2 were found in the system. The solubility of chromium fluoride in liquid hydrogen fluoride was measured at different temperatures. (Author's summary)

Okada, Shinzo and Yoshizawa, Shiro.
MERCURY METHOD TO PRODUCE CAUSTIC ALKALI BY ELECTROLYSIS. [1959] [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17876

Trans. of Japanese patent 180004, pub. 24 Apr 48, pat. date 23 Aug 49, appl. 23 Aug 43 (Receipt no. 23-7386) 25 July 46 (pub. no. 24-1314).

This invention uses the mercury method to produce sodium hydroxide from sodium chloride, and potassium hydroxide from potassium chloride, by electrolysis. An amalgam of copper, silver, gold or noble metal is used as the electrode instead of the mercury electrode in the conventional method. The operation is safe and economical.

Osipov, K. A.
ACTIVATION ENERGY VALUES FOR SPONTANEOUS DIFFUSION IN LIQUID METALS. 18 June 59, 5p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20135

Trans. of Akademiya Nauk, SSSR. Doklady, 1958, v. 121, no. 6, p. 1019-1020.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as AEC-tr-3519, 1958, 3p.

To verify the theory, developed from previous studies (59-10803 and 59-16109 or 15-16122), that the activation energy of self diffusion in metals near the melting point is equal to the activation energy referred to one atom minus the latent heat of melting, components of the formula $\Delta H_{zh} = q - L$ are tabulated for Na, β-Sn, Al, Mg, Pb, and Fe. Here ΔH_{zh} represents the activation energy values of spontaneous diffusion in liquid metals (zh = zhidkostnye = liquid), L is the latent heat of melting, and q, the overall activation energy referred to one atom, is calculated according to $q = [(H_{T_s} - H_{298^o})/(T_s - 298^o)]\ (6.7 - \ln T_s) - S_{298^o}$ where T_s is the melting temperature, $H_{T_s} - H_{298^o}$ is the difference in the heat content values (for 1 g-atom) at the melting point and at the standard temperature 298.16°K, and S_{298^o} is the entropy (for 1g-atom) of the solid metal at standard temperature. The ΔH_{zh} values for liquid Sn, Al, and Mg are given on the basis of experimental data of the viscosity coefficient near the melting points, values for Na and Pb are given on the basis of the spontaneous diffusion coefficient, and values for Fe on the basis of viscosity and spontaneous diffusion. The ΔH_{zh} values and the differences between q and L are very close in all cases. The viscosity method and method of radioactive isotopes yield analogical (sic) ΔH_{zh} values for iron and iron-carbon alloys A comparison of the equation $\Delta H = nq$ (here ΔH is the activation energy of the spontaneous volume diffusion in solid metals, and n is the number of simultaneously activated atoms in the group) with the equation $\Delta H_{zh} = q - L$ indicates that the spontaneous diffusion in liquid metals is connected with individual and not group activation of atoms. (See also 59-20136)

Perrot, Marcel and Sator, Abdelhak.
METHOD OF STUDY OF IONIC CONDUCTIVITIES OF CERTAIN SALTS AT ORDINARY TEMPERATURE (Sur une Methode d'Etude des Conductibilites Ioniques de Certains Sels, a la Temperature Ordinaire). [1959] [3]p. 7 refs. No. 235.
Order from SLA mi$1.80, ph$1.80 59-17946

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1952, v. 234, no. 19, p. 1883-1885.

The method described, applied to Cl_2Pb, makes possible the study of the conductivity of this salt at ordinary temperature and in a vacuum. This conductivity tends toward a limit, after a short development. It is ionic: the two ions Cl^- and Pb participate in the carrying of the current. (Author)

Prazak, M., Prazak, V., and Cihal, Vl.
THE STRUCTURE OF THE PASSIVE FILM ON CHROMIUM STEELS. [1959] 10p.
Order from ATS $13.90 ATS-26L33G

Trans. of Z[eitschrift fur] Elektrochem[ie] (West Germany) 1958, v. 62, no. 6/7, p. 739-745.

Rode, T. V. and Agronomov, A. E.
EFFECT OF DIFFERENT FACTORS ON THE SPECIFIED SURFACE AREA AND POROSITY OF CHROMIUM [CHROMIA] CATALYSTS [Vliyaniye Razlichnykh Faktorov na Velichinu Udel'noy Poverkhnosti i na Poristost' Khromovykh Katalizatorov]. [1959] 4p.
Order from ATS $5.00 ATS-83L32R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 124, no. 3, p. 625-627.

Rode, T. V. and Balandin, A. A.
THERMOGRAPHIC INVESTIGATION OF THE PROCESSES OF REVIVIFICATION OF CHROMIUM CATALYSTS [Termograficheskoye Issledovaniye Protsessov Regeneratsii Khromovykh Katalizatorov]. [1959] 7p.
Order from ATS $7.50 ATS-70L31R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1958, v. 28, no. 11, p. 2909-2915.

Rudorff, W. and Sick, H. H.
INTERCALATION COMPOUNDS OF ALKALI AND ALKALINE EARTH METALS IN MOLYBDENUM DISULFIDE AND TUNGSTEN DISULFIDE. [1959] 2p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-17936

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, no. 3, p. 127.

MO and W disulfides were reacted with alkali metals in liquid ammonia. Black alkali MO or W sulfides were isolated from solutions which contain an excess of the alkali metal by filtration, washing with liquid ammonia, and removal of the contaminating ammonia in vacuo at room temperature. The following uniform compounds resulted: $Cs_{0.5}MoS_2$, $Cs_{0.45}WS_2$, $Rb_{0.5}WS_2$, $K_{0.6}MoS_2$, $K_{0.45}WS_2$, $Na_{0.8}(NH_3)_{0.2}MoS_2$, $Na_{0.6}(NH_3)_{0.1}WS_2$, $Li_{1.1}(NH_3)_{0.6}MoS_2$, and $Li_{0.5}(NH_3)_{0.6}WS_2$. Corresponding ammonia salts were also formed with alkaline earth metals. The K, Rb, and Cs compounds burn in air. Reaction with water produces hydrogen, containing a small amount of H_2S, and regenerates the metal sulfide. Decomposition beginning at 100°C in vacuo, leads to a metal sulfide and a new compound, presumably an alkali thiometallate. Mo-Mo and W-W distances are only slightly increased but the identity periods in the direction of the c-axis (perpendicular to the layers) for K, Rb, and Cs tungsten compounds are increased about 2A for each layer of K incorporated. Sulfides such as TaS_2, ReS_2, SnS_2, WSe_2 also form corresponding compounds, but sulfides crystallizing in the NiAs type, such as Cr_2S_3, do not react.

Schwabe, K. and Dietz, G.
THE PASSIVITY OF NICKEL. [1959] 13p.
Order from ATS $16.10 ATS-23L33G

Trans. of Z[eitschrift fur] Elektrochem[ie] (West Germany) 1958, v. 62, no. 6/7, p. 751-759.

Shestakov, V. I. and Terent'yev, D. F.
DETERMINATION OF THE OPTIMUM TEMPERATURE CONDITIONS IN OPERATING CATALYTIC APPARATUS FOR THE OXIDATION OF SULFUR DIOXIDE (Opredeleniye Optimal'nogo Temperaturnogo Rezhima Deystvuyushchikh Kontaktnykh Apparatov dlya Okisleniya Dvuokisi Sery). [1959] 7p.
Order from ATS $9.15 ATS-33L33R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1958, no. 6, p. 350-354.

Suhrmann, R. and Kangro, Cl.
THE SEMI-CONDUCTOR PROPERTIES OF THE SYSTEMS POTASSIUM-ANTIMONY, CAESIUM-ANTIMONY, POTASSIUM-INDIUM, CAESIUM-INDIUM (Uber die Halbleitereigenschaften der Systeme Kalium-Antimon, Casium-Antimon, Kalium-Indium, Casium-Indium). [1959] [4]p. 5 refs. No. 228.
Order from SLA mi$1.80, ph$1.80 59-17962

Trans. of die Naturwissenschaften (West Germany) 1953, v. 40, no. 4, p. 137-138.

The resistance-temperature dependency was determined quantitatively, in order to calculate the energy separations of the valence band and of the points of disturbance from the conductivity band, in particular in the case of the compounds K_3Sb, KSb and Cs_3Sb. The conductivity-concentration diagram at 273° K of the system K-Sb is shown. In the case of the compounds KSb and K_3Sb the conductivity declined by about 10 powers of ten as compared with the pure metals. After the diffusing of K into a thin Sb-layer, the resistance-temperature behavior at 6 atom-% K is still metallic. At 28 atom-% K it goes over from the metallic of the pure Sb into a partially metallic, partially semi-conducting one; the corresponding is the case for 91 atom-% K. The semi-conducting behavior is located in each case in the area of high temperatures. In the area of low temperatures R increases with T. The curves which represent for the compounds K_3Sb and Cs_3Sb log χ against 1/T, clearly show eigen (natural) semi-conductivity and disturbance point semi-conductivity. The values of the band separations in ev are tabulated. The band separations

of the eigen conductivity and of the disturbance conductivity of the compound Cs_3Sb are smaller than those of K_3Sb. The separation of the electrons from the valence band therefore requires less energy in the case of Cs_3Sb than in the case of K_3Sb; on the other hand, the electrons in the valence band of KSb are bound more firmly than in that of K_3Sb. In the case of K-concentration between KSb and K_3Sb, the band separations of the eigen semi-conductivity are a few tenths of a volt less than for K_3Sb, the band separations of the disturbance point semi-conductivity at 0.2 v, as in the case of K_3Sb. In addition there are required for the representation of the resistance behavior, disturbance points with the separation 0.05 to 0.07 v. The direction of the thermocurrents arising in connection with the temperature differences indicates, in the case of the K_3Sb layers, n-conduction. Negative resistance-temperature coefficients appeared also in the case of K-In and Cs-In layers. For a layer with 72 atom-% K the resistance was 82.0 Ω at 83° K and 37.7 Ω at 287° K. For a layer with 40 atom-% Cs the resistance changed in the same temperature range by 4 powers of ten. In the latter case the band separations were 0.20 and 0.17 ev.

Timofeyeva, Ye. A. and Shuykin, N. I.
CONTACT CATALYTIC HYDROGENATION OF N-PENTANE AT VARIOUS TEMPERATURES. [1959] 6p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20293

Trans. of *Akademiya Nauk SSSR. Otdeleniye Khimicheskikh Nauk. Izvestiya, 1958, no. 5, p. 570-574.

The influence of temperature on the course of the dehydrogenation reaction of n-pentane in the presence of alumina-chromia catalyst was investigated. It was shown, that at 500-550° in the admitted conditions and at a given depth of side reactions, the dehydrogenation of n-pentane reaches an equilibrium. It was established, that for an ameliozation of the yield in pentenes, not an increase in the activity of studied catalyst, but an improvement of its selectivity is required. (Author)

Tur'yan, Ya. I. and Gorodetskiy, Yu. S.
OSCILLOGRAPHIC RESEARCH INTO THE OXIDES FORMED AT A NICKEL ANODE DURING THE ELECTRO-CHEMICAL EVOLUTION OF OXYGEN (Ostsillograficheskoye Issledovaniye Okislov Obrazuyushchikhsya na Nikelevom Anode pri Elektrokhimicheskom Vydelenii Kisloroda) tr. by J. H. Dixon. Sep 58 [8]p. (2 figs. omitted) 11 refs. Library Trans. no. 770; M. 141.
Order from LC or SLA mi$1.80, ph$1.80 59-18751

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 117, no. 4, p. 655-657.

A loop oscillator was included in the electrode circuit in order to record discharge curves. "Full" and "incomplete" curves, the first including the reduction of the unstable higher oxide NiO_2 and the second recorded with the vibrator included in the electrode circuit some time after disconnecting the polarizing current, enabled the quantity of NiO_2 to be determined. The electrolyte used was 7.5N KOH. Polarizing current density was varied between 0.1 and 2 A/cm^2. The quantity of the stable oxide Ni_2O_3 is found from the "incomplete" discharge curves and is given in "layers". The coating thicknesses on smooth nickel anodes are shown to be far thicker than was previously thought. It is suggested that the oxygen evolved does not only spring from oxide formation and decomposition. (RAE abstract)

Vozdvizhenskiy, G. S. and Sayfullin, R. S.
THE CONNECTION BETWEEN THE TEXTURE AND PROPERTIES OF ELECTROLYTIC NICKEL DEPOSITS. [K Voprosu o Svyazi Tekstury Elektroliticheskikh Osadkov Nikelya s ikh Svoystvami]. [1959] 3p.
Order from ATS $5.25 ATS-29L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 4, p. 831-833.

Zagoruchenko, V. A.
VAPOR PRESSURE OF LIQUID METHANE [Uprugost' Parov Zhidkogo Metana]. [1959] 3p.
Order from ATS-$3.95 ATS-76L33R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1959, v. 33, no. 2, p. 326-327.

Zinov'yev, A. A., Chudinova, L. I., and Smolina, L. P.
THE BINARY SYSTEM $NaClO_4)_2$. Aug 59 [11]p. 3 refs. Picatinny Arsenal Trans. no. 51.
Order from LC or SLA mi$2.40, ph$3.30 59-19243

Trans. of Zhur[nal] Neorg[anicheskoy] Khim[ii] (USSR) 1956, v. 1, p. 1850-1856.

Data have been obtained which point out the existence in barium perchlorate of three polymorphous modifications instead of two modifications described in the literature. Confirmation is obtained of the literature referenced existence of a change point at 280°C (α - β) (at 284°C according to our data) and an up-to-now unknown change of barium perchlorate has been found at 360° (β - γ). Confirmation is obtained of the literature referenced polymorphous change of sodium perchlorate with a change point at 308°C. The system barium perchlorate-sodium perchlorate is characterized by the existence of a simple eutectic with a change point related with the polymorphous change of the γ - modification into the β -modification of $Ba(ClO_4)$. (Author's conclusions)

EARTH SCIENCES

ACTIVITIES IN THE ARCTIC AND ANTARCTIC [NO. 12, 16 OCT 59]. [1959] [8]p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-19820

Trans. of unevaluated information selected from foreign-language publications.

Contents:
Arctic activities
USSR (Arctic navigation in 1959, Regular service opened on an arctic steamship line, Workers sent to far north regions, Soviet arctic cities continue to develop, Helicopters aid hunters in the Arctic, Soviets criticize militarization of Alaska)
Norway (New seismographic station in Spitsbergen)
International (International scientific expedition to Greenland)
Antarctic activities
Belgium (Second Belgian Antarctic Expedition)
(See also 59-16993, 59-18842)

AKADEMIYA NAUK ARMYANSKOY SSR, YEREVAN. IZVESTIYA, SERIYA GEOLOGICHESKIKH I GEOGRAFICHESKIKH NAUK 1958, VOL. 11, NO. 5, P. 3-68 (News of the Academy of Sciences of the Armenian SSR. Geological and Geographical Sciences Series) [1959] [11]p. SOV-172-11-5-(1-9)/9.
Order from OTS $0.50, $3.00/6 mo. PB 141 017T-4
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

INFORMATION ON SOVIET BLOC INTERNATIONAL GEOPHYSICAL COOPERATION: 1959. 18 Sep 59, 17p.
Order from OTS $12.00/series PB 131 632-84

Trans. of unevaluated information on Soviet bloc activities in the International Geophysical Cooperation program.

Lebedev, T. S., Sollogub, V. B. and others.
SOVIET BLOC INTERNATIONAL GEOPHYSICAL YEAR LITERATURE: SELECTED TRANSLATIONS. Final rept. 12 Aug 59, 152p. 56 refs. JPRS: 852-D.
Order from OTS $3.00 59-11765

Trans. of Mezhdunarodnyy Geofizicheskiy God-Informatsionnyy Byulleten (USSR) 1958, no. 1, p. 3-111.

Toporkov, L.
PEACEFUL EXPLOSION (Mirnyy Vzryv). Suppl. to "Explosion at Tagansay". 23 Mar 59 [7]p. (4 figs. omitted) 1 ref. AF 1255659.
Order from LC or SLA mi$1.80, ph$1.80 59-16316

Summary trans. of Pravda Vostoka (USSR) 1957, no. 298, p. 4.

The experimental detonation of a 1,000 ton charge of explosives placed in a chamber 40 meters underground is described in journalist's style. The explosion was planned for research purposes in the fields of geophysics, mining engineering, etc.

Vitkevich, V. V.
INVESTIGATION OF IONOSPHERE NON-UNIFORMITIES BY RADIO ASTRONOMICAL METHODS (Issledovaniye Ionosfernykh Neodnorodnostey Radioastronomicheskimi Metodami) tr. by J. W. Palmer. Nov 58 [13]p. 2 refs. Library Trans. no. 788; M. 128.
Order from LC or SLA mi$2.40, ph$3.30 59-18739

Trans. of *Radiotekhnika i Elektronika (USSR) 1958, v. 3, no. 4, p. 478-486.

When investigating electron non-uniformities in the ionosphere use is made of the method of radio radiation of "radio stellae". The dimensions and electron concentration of large-scale non-uniformities are calculated from data on the irregularities of vertical ionosphere refraction. Data are given of irregularities of horizontal radio refraction, and also of electron non-uniformities which disturb the interference picture. (Royal Aircraft Establishment abstract)

Climatology and Meteorology

METEOROLOGIYA I GIDROLOGIYA (USSR) 1959, (Meteorology and Hydrology).
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 3, p. 3-65, PB 141 045T-17
No. 4, p. 3-77, PB 141 045T-16
No. 5, p. 3-63, PB 141 045T-18
No. 6, p. 3-63, PB 141 045T-19

Consists of abstract in English.

SCIENTIFIC WORK IN METEOROLOGY: REPT. 8 Sep 59, 116p. 1038 refs. JPRS: L-972-D.
Order from OTS $2.50 59-11616

Trans. of mono. Soobshcheniye o Nauchnykh Rabotakh po Meteorologii, Moscow, 1957.

The present bibliography covers the results of scientific investigations carried out in the USSR during 1950-1955 in the following branches of meteorology: climatology; synoptic meterology; dynamic meteorology; actinometry, atmospheric optics; physics of clouds and precipitations; physics of the ground surface layer and atmospheric turbulence.

Chang, Huai and Shih, Chiu-en.
METEOROLOGICAL RESEARCH IN COMMUNIST CHINA. 19 June 58 [9]p. (6 photos. omitted) AF 1185157.
Order from LC or SLA mi$1.80, ph$1.80 59-22197

Trans. from [Ch'i Hsiang Hsueh Pao] (Chinese People's Republic) 1957, Aug.

Data are presented on anticyclones in Eastern Asia. Stationary anticyclones occur frequently in January and February, and generally remain over the border region

of Outer Mongolia and China for periods of a month or more. Except during January and February, the anticyclones over Eastern Asia are mostly translational. The average translational period of anticyclones entering Eastern Asia and leaving the sea coast is 6 days.

Hwang, S. S.
METEOROLOGICAL RESEARCH IN COMMUNIST CHINA; ON BASIC FACTORS DETERMINING THE MAIN FEATURES OF THE GENERAL CIRCULATION OF THE ATMOSPHERE. 17 June 58 [15]p. (19 photos. omitted) 1 ref. AF 1183896.
Order from LC or SLA mi$2.40, ph$3.30 59-22198

Reprint from Scientia Sinica (Chinese People's Republic) 1958, v. 7, no. 2 (Trans. of Ch'i Hsiang Hsuch Pao (Chinese People's Republic) 1955, v. 26, no. 1/2, p. 35-64).

The latitudinal distribution of the gradient of the solar radiation intensity, including its variations, is the most basic factor which determines the main features of general circulation. From this basic and essential cause-effect relation, the possibility and the physical evidence for establishing a method of forecasting the variation of general circulation for a longer period are then illustrated and demonstrated. The importance and necessity of further research on the solar radiation, the earth radiation and the constituents and structure of atmosphere are pointed out and stressed. (Extracted from the report)

Koyano, Masaki, and Maruyama, Eizo.
MEASURING INSTRUMENTS FOR INDUSTRIAL METEOROLOGY, tr. by Noburu Hiraga. [1959] 22p. 31 refs.
Order from LC or SLA mi$2.70, ph$4.80 SCL-T-232

Trans. of unidentified Japanese mono.

Descriptive information is presented on (1) thermometers, (2) hygrometers, (3) evaporimeters, (4) rain gages, (5) anemoscopes and anemometers, (6) pyrheliometers, and (7) measuring instruments for microclimate and their manipulation.

Moin, A. S. and Obukhov, A.
SLIGHT ATMOSPHERIC VARIATIONS AND THE ADAPTATION OF METEOROLOGICAL FIELDS (Malye Kolebaniya Atmosfery i Adaptatsiya Meteorologicheskikh Poley) tr. by John Miller. Mar 59 [19]p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16007

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1958, no. 11, p. 1360-1373. Another translation is available from OTS $.75 as 59-13051, JPRS(NY)-L-619, 12 Jan 59, 25p.

Small oscillations in a baroclinic atmosphere were analyzed. Oscillations occurring in the atmosphere for arbitrary initial data fall into 3 classes: (1) 2-dimensional waves, (2) inner acoustic waves, and (3) inner gravitational waves. The 5th-order equations of the hydrodynamics of the atmosphere were simplified. The validity of the simplifications was substantiated by clarifying the nature of the rapid wave movements. An invariant was found that made it possible to calculate, for arbitrary initial data, the final stationary state of the atmosphere without an analysis of the wave processes which determine the rearrangement of the fields. It was shown that a quasi-static approximation filters the inner acoustic waves and increases the gravitational-wave frequency. The time of establishment of quasi-static equilibrium in the atmosphere was several minutes.

Rakipova, L. R.
INFLUENCE OF ATOMIC EXPLOSIONS ON THE ATMOSPHERE. 24 Aug 59, 10p. 26 refs. JPRS: L-900-D.
Order from OTS $0.50 59-11598

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 6, p. 53-57.

A review of the literature indicates that the probability of development of sharply anomalous, and, in particular, catastrophic phenomena of weather as a result of the effects of artificial nuclear explosions in the atmosphere is very small. A more natural cause of sharply expressed anomality of atmospheric processes in recent years is the increase of solar activity in connection with the approach to the maximum of the century and 11-year cycles.

Sergiyeva, A. P.
THE ELECTRICAL CHARGES OF CLOUD PARTICLES (Ob Elektricheskikh Zaryadakh Oblachnykh Chastits) tr. by John Miller. Oct 58 [19]p. 19 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16022

Trans. of *Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1958, no. 3, p. 247-257.

A method and an instrument are described for the simultaneous measurement of individual electrical charges of particles from a sample containing from 50,000 to 100,000 droplets. The operating principle of the instrument is measurement of charges of the very small particles of solid aerosols, based on the precipitation of the particles from an air stream into an electric field. The number of charged droplets in an artificial cloud is shown to be a function of the length of time the cloud exists: the dispersion of charges in natural clouds increases with an increase in the size of the particles.

Tsyganov, G. P.
EXPERIENCE OF METEOROLOGICAL SERVICING OF TOWER CONTROL AREA AND UTILIZATION OF RADAR STATION "RUPOR" AT THE AIR WEATHER STATION OF THE CIVIL AIR FLEET AT ROSTOV-ON-DON. 24 Aug 59, 4p. JPRS: L-898-D.
Order from OTS $0.50 59-11596

Trans. of Meteorologiya i Gidrologiya (USSR) 1957, no. 6, p. 46-47.

Problems of active meteorological servicing of flights of planes of the GVF [Civil Air Fleet] can be solved

successfully by weathermen of the tower control area. It is expedient to perfect and strengthen this form of meteorological servicing of plane flights. The radar station permits the determination with adequate accuracy of direction and velocity of thunderstorm foci moving in space; consequently, the problem of predicting the beginning of thunderstorm activity in the vicinity of the airport with a RUPOR station is considerably simplified. (Author's conclusions)

Yang, Chien-chiu.
THE PRACTICE AND PROSPECT OF LONG-RANGE WEATHER FORECASTING. 18 May 59, 11p. 1 ref. JPRS: 1594-N.
Order from OTS $0.50 59-13528

Trans. of K'o Hsueh T'ung Pao (Chinese People's Republic) 1958, no. 23, p. 722-724.

Geodesy

Aygina, N. P.
CONFERENCE OF HIGHER EDUCATIONAL INSTITUTIONS CONCERNING GEODETIC AND PHOTOGRAMMETRIC INSTRUMENT CONSTRUCTION (Mezhvuzovskoye Soveshchaniye po Geodezicheskomu i Fotogrammetricheskomu Priborostroyeniye). 16 Feb 59 [3]p. AF 1255524.
Order from LC or SLA mi$1.80, ph$1.80 59-16321

Trans. of Leningrad U. Vestnik (USSR) 1958, no. 24, Seriya Geologii i Geografii, no. 4, p. 118-119.

Brief summaries are given of 3 of the 36 papers submitted to the conference which was held on May 6 to 10, 1958 at the Moscow Institute of Geodetic, Aerial Surveying and Cartographic Engineers. The papers summarized were: (1) The prospective growth of geodetic, aerial surveying and photogrammetric work and the resultant requirements from instrument manufacturers, by S. G. Sudakov, head of the Chief Administration of Geodesy and Cartography; (2) Scientific research work in the field of topographic aerial cameras, by M. D. Konshin (TsNIIGAiK); and (3) Photogrammetric equipment manufacturing and means for its further development, by F. V. Drobyshev. The topics of two of the other papers are noted but they are not summarized and their titles are not given.

GEODEZIYA I KARTOGRAFIYA (USSR) 1959, NO. 5, P. 3-80 (Geodesy and Cartography). [1959] 1v. SOV-6-59-5-(1-26)/26.
Order from OTS $0.60, $3.50/6 mo. PB 141 001T-16
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Geology

*GEOKHIMIYA (USSR) 1959, NO. 3, P. 195-288 (Geochemistry). [1959] [14]p. SOV-7-59-3-(1-13)/13.
Order from OTS $0.60, $2.25/6 mo. PB 141 002T-11
Foreign $0.85, $3.25/6 mo.

Consists of abstracts in English.

Belen'kiy, Ya. E., Mikhaylovskiy, V. N., and Svenson, A. N.
A MULTICHANNEL TELEMETERING DEVICE FOR COORDINATED GEOPHYSICAL INVESTIGATION OF WELLS. [1959] 5p.
Order from ATS $7.75 ATS-28L31R

Trans. of *Geol[ogiya] Nefti i Gaza (USSR) 1959, v. 3, no. 1, p. 52-55.

Czike, K. and Fodor, P. C.
DEUTERIUM OXIDE CONTENT OF OIL FIELD WATER SAMPLES. [1959] 7p.
Order from ATS $13.30 ATS-13L34H

Trans. of Hidrol[ogiai] Kozlony (Hungary) 1957, v. 37, no. 3, p. 245-248.

Gur'ba, P. K.
METHOD OF DETERMINATION OF TRUE WATER SATURATION OF AN OIL-BEARING FORMATION. [1959] 4p.
Order from ATS $5.95 ATS-71L31R

Trans. of *Geol[ogiya] Nefti i Gaza, (USSR) 1959, v. 3, no. 2, p. 49-52.

Khaykovich, I. M. and Khalfin, L. A.
THE EFFECTIVE DYNAMIC PARAMETERS OF INHOMOGENEOUS ELASTIC MEDIA FOR PLANE LONGITUDINAL WAVE PROPAGATION. [1959] 13p.
Order from ATS $14.85 ATS-20L34R

Trans. of *Akad[emiya] Nauk SSSR. Izvest[ia]. Ser[iya] Geofiz[icheskaya] 1959, no. 4, p. 505-515.

Markovskiy, N. I.
RELATIONSHIP BETWEEN THE LOWER CARBONIFEROUS VOLGA-URAL OIL SOURCE ROCKS AND COAL MEASURES. [1959] 8p.
Order from ATS $11.95 ATS-73L32R

Trans. of *Geol[ogiya] Nefti i Gaza (USSR) 1959, v. 3, no. 3, p. 22-29.

Riznichenko, Yu. V. and Shamina, O. G.
ELASTIC WAVES IN STRATA OF FINITE THICKNESS (INVESTIGATED BY MEANS OF TWO-DIMENSIONAL MODELS). [1959] 17p.
Order from ATS $21.50 ATS-24L32R

Trans. of *Akad[emiya] Nauk SSSR. Izvest[iya] Ser[iya] Geofiz[icheskaya] 1959, no. 3, p. 344-360.

Yerozolimskiy, B. G., Voytsik, L. R. and others
NEW METHODS OF LOGGING BORE HOLES, USING PULSED NEUTRON SOURCES (Novyye Metody Issledovaniya Burovykh Skvazhin, Osnovannyye na Ispol'zovanii Impul'snykh Neytronnykh Istochnikov). [1959] 9p.
Order from ATS $14.10 ATS-67L29R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1958, v. 36, no. 11, p. 21-28.

The development of neutron generators for radioactivity well logging in the Soviet Union and America is described. Possible employment of such units in pulse operation is discussed, as well as the development of new exploration methods based on pulse generating neutron sources which will enable one to study the unsteady processes of neutron and reservoir rock interaction.

Mineralogy

Dobryanskiy, A. F., Bogomolov, A. I., and Shklyar, I. V.
CATALYTIC EFFECT OF ROCKS ON THE CHANGE IN PETROLEUM COMPOSITION. [1959] 11p.
Order from ATS $15.95 ATS-25L34R

Trans. of Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1949, v. 22, no. 10, p. 1124-1132.

Finogenov, I. S.
A STUDY OF THE EFFECT OF THE CHIEF NATURAL FACTORS ON THE HARDNESS OF SANDSTONES AND SILTSTONES. [1959] 6p.
Order from ATS $8.50 ATS-19L34R

Trans. of Izvest[iya] Vysshykh Ucheb[nykh] Saved-[eniy]. Neft' i Gaz (USSR) 1959, no. 2, p. 47-52.

Proyavkin, E. T.
SOLVING CERTAIN PROBLEMS IN THE MECHANICS OF ROCKS (O Resheniy Nekotorykh Zadach Mekhaniki Gornykh Porod). Aug 59 [8]p. 3 refs. R. T. S. no. 1067.
Order from LC or SLA mi$1.80, ph$1.80 59-19248

Trans. of Ugol' (USSR) 1958 [v. 33] no. 7, p. 28-30.

Basic arguments presented by K. V. Ruppeneit in his book Nekotoryye voprosy mekhaniki gornykh porod (Some problems in the mechanics of rocks) are criticized.

Oceanography

MARINE CHEMISTRY AND ITS DEVELOPMENT. 15 Sep 59, 5p. JPRS: L-1860-D.
Order from OTS $0.50 59-11786

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 116-117.

Discussions are presented on: (1) Chemical composition of sea water; (2) distribution of chemical factors in sea water; and (3) problems in the development of marine chemistry research.

MARINE GEOLOGY AND THE PROBLEM OF SUBMARINE OIL RESOURCES. 15 Sep 59, 8p. 2 refs. JPRS: L-1861-D.
Order from OTS $0.50 59-11787

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 118-120.

THE PROGRESS OF MARINE PHYSICS AND OUR TASK. 15 Sep 59, 11p. JPRS: L-1859-D.
Order from OTS $0.50 59-11785

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 112-115.

The immediate task to be undertaken is the development of a hydroelectric power installation designed to utilize the tides and currents of Chiao-chou Bay: theoretical capacity of the installation is circa 650,000 kilowatts. Dynamics of the movement of coastal mud and sand will be analyzed in order to facilitate the dredging for the Tang-kou harbor now under development, and to furnish information for future exploitation of the Yangtze River estuary and Hang-chou Bay.

Cheng, Chung.
PLANKTON INVESTIGATION IN CHINA. 15 Sep 59, 4p. JPRS: L-1863-D.
Order from OTS $0.50 59-11789

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 122-123.

Chi, Ming-hou.
THE COMPLEX UTILIZATION OF SEAWEED. 15 Sep 59, 6p. JPRS: L-1862-D.
Order from OTS $0.50 59-11788

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 120-122.

Chu, K'o-chen.
MAKE THE OCEANS SERVE SOCIALIST CONSTRUCTION. 15 Sep 59, 5p. JPRS: L-1857-D.
Order from OTS $0.50 59-11783

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 108-109.

Pei, Li-sheng.
EXERT OUR UTMOST FOR THE FULFILLMENT OF RESEARCH TASKS IN OCEANOGRAPHY. 15 Sep 59, 8p. JPRS: L-1858-D.
Order from OTS $0.50 59-11784

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 109-112.

Ruschmann, G.
CONTRIBUTIONS TO THE MICROBIOLOGY OF CHLORELLA. I. PURE AND IMPURE CHLORELLA CULTURES (Beiträge zur Mikrobiologie der Chlorella. Mitteilung I. Chlorella-Rein- und -Rohkulturen) tr. by D. A. Sinclair. 1959, 30p. 8 refs. Technical Trans. 802; C-3083.
Order from NRCC NRCC TT-802

Trans. of Biologisches Zentralblatt (East Germany) 1956, v. 75, p. 129-149.

Ruschmann, G.
CONTRIBUTIONS TO THE MICROBIOLOGY OF CHLORELLA. II. MICROSCOPIC STUDIES OF THE MICROFLORA (Beiträge zur Mikrobiologie der Chlorella. Mitteilung II. Mikroskopische Untersuchungen der Mikroflora) tr. by D. A. Sinclair. 1959, 34p. 19 refs. Technical Trans. 803; C-3084.
Order from NRCC NRCC TT-803

Trans. of Biologisches Zentralblatt (East Germany) 1956, v. 75, p. 476-499.

Ruschmann, G.
CONTRIBUTIONS TO THE MICROBIOLOGY OF CHLORELLA. III. CULTURAL STUDY OF THE MICROFLORA (Beiträge zur Mikrobiologie der Chlorella. Mitteilung III. Kulturella Untersuchung der Mikroflora) tr. by D. A. Sinclair. 1959, 33p. 11 refs. Technical Trans. 804; C-3085.
Order from NRCC NRCC TT-804

Trans. of Biologisches Zentralblatt (East Germany) 1956, v. 75, p. 576-596.

T'ung, Ti-chou.
WORK OF THE LABORATORY OF EMBRYOLOGY, INSTITUTE OF OCEANOGRAPHY, ACADEMIA SINICA, IN THE PAST 8 YEARS. 15 Sep 59, 6p. JPRS: L-1864-D.
Order from OTS $0.50 59-11790

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 124-125.

ENGINEERING

DIGEST OF SOVIET TECHNOLOGY. Apr-Aug 59, 5 nos.
Order from EIS $18.00/Surface mail
$22.00/Air mail

Consists of translations on recent technological developments in the USSR and East European countries from selected periodical and non-periodical literature of these countries.

Contents:
no. 1. Apr 59, 36p.
no. 2. May 59, 50p.
no. 3. June 59, 52p.
no. 4. July 59, 54p.
no. 5. Aug 59, 60p.

KHOLODIL'NAYA TEKHNIKA (USSR) 1959 [VOL. 36] (Refrigeration Engineering).
Order from OTS $0.70, $2.50/year
Foreign $0.95, $3.50/year

No. 2, p. 1-79, PB 141 061T-3
No. 3, p. 1-79, PB 141 061T-2

Consists of abstracts in English.

RAZVEDKA I OKHRANA NEDR (USSR) 1959 [Vol. 25] NO. 5, P. 1-64 (Exploration and Conservation of Natural Resources). [1959] [20]p. SOV-132-59-5-(1-17)/17.
Order from OTS $0.50, $3.00/6 mo. PB 141 135T-15
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Garaico-Echea, Abraham Ignacio.
SCREEN FOR DEFENSE AGAINST AIRPLANES, tr. by J. C. Levy. 21 July 59, 17p. (59 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-18779

Trans. of French patent 833,633, gr. 6, cl. 4, appl. for 28 June 37, granted 25 July 38, pub. 26 Oct 38.

This invention relates to a screen for defense against airplanes or any other flying machines, and is characterized in that the longitudinal elements thereof such as wires present a certain resistance, while the transverse elements such as wires interconnecting the longitudinal elements are of smaller resistance, such screen comprising, moreover, a device for the destruction or violent stoppage of airplanes, such that any airplane encountering the screen slides along the longitudinal elements while breaking the transverse elements, being thus directed toward the device serving for destruction or violent stoppage. In accordance with a modification, the destruction or stoppage elements are combined with resisting or retarding means such as a parachute, in a way that the the moment the airplane comes in contact with the destruction or stoppage elements the said resisting means enter into action and effect the abrupt retardation of the airplane.

The invention also concerns a device for launching a defense screen either by means of another airplane or by means of a projectile, which device is characterized by a receptacle that is carried by the airplane or the projectile and receives the folded screen as well as means of sustentation such as a parachute that is likewise folded, said parachute being so arranged as itself to effect the extraction of the screen from the receptacle under the influence of the speed of the airplane or of the projectile. (Extracted from the report) (See also 59-18778)

Garaico-Echea, Abraham Ignacio.
SHELL FOR THE PLACEMENT OF OBSTRUCTIONS AND SCREENS OF OBSTRUCTIONS AGAINST AIRPLANES, tr. by J. C. Levy. 14 July 59, 8p. (7 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18778

Trans. of French patent 812,183, gr. 11, cl. 4, appl. for 26 Sep 36, granted 27 Jan 37, pub. 1 May 37.

This invention relates to a shell for placement in the atmosphere of vertical obstructions of great extension and screens of obstructions opposing the passage of airplanes and other flying machines. The shell is characterized in that it includes a folded parachute with the object of launching these bodies into the air and their placement in the desired spot in the atmosphere in order that the obstruction may then extend and be capable of settling in place with extreme rapidity in the path of an airplane or airplanes which it is desired to bring down. The obstruction is extended by means of the unwinding of the wire supported at one of its ends on the parachute which opens in the air and through the accelerated rotation of the spool during its descent, and once the wire is unwound to its full length the spool remains suspended at the lower end of the wire. According to one embodiment the spool carries an explosive charge and percussive means, such that if an aircraft drags the wire the parachute exerts a pull on such wire, while the spool, striking against the body of the aircraft, explodes. (Extracted from the report) (See also 59-18779)

Herz, Edmund von, Sr. and Herz, Edmund von, Jr.
APPARATUS FOR SEPARATING PIPE CONDUITS, PARTICULARLY INSTALLED DEEP-BORING PIPES, tr. by FHB. 23 June 59, 5p. (3 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18294

Trans. of German patent 900,201, Class 5a, Group 35 20; patented from 5 June 51, pub. 21 Dec 53.

The apparatus is characterized by a blasting cut device based on the hollow-charge principle, the active recess of the hollow charge being shaped as continuous groove or channel on the periphery of a cylinder or a disk which (groove or channel) corresponds to the diameter of the pipe. The hollow charge is provided with a metal lining. In case of boring pipes filled with water, air-filled, pressure safe containers are provided above or below the blasting charge apparatus which absorb the static pressure of the explosion gases.

Khrushchev, N. S.
SEVEN-YEAR PLAN (1959-1965) DIRECTIVES FOR DEVELOPMENT OF TRANSPORTATION AND COMMUNICATIONS IN THE USSR. 12 Dec 58 [4]p. 2 refs. AF1187420.
Order from LC or SLA mi$1.80, ph$1.80 59-22189

Trans. from Pravda, Moscow (USSR) 1958, 14 and 15 Nov.

Translation of an excerpt concerning the development of transportation and communications from Khrushchev's report to the XXI CPSU Congress-Control Figures of the Development of National Economy of the USSR for 1959-1965, -appearing in Pravda 14 November 1958 and a passage of Khrushchev's speech delivered at the graduation ceremony in the Military Academy on 14 November 1958.

Miksa, J. and Kursa, G.
NOUVELLES POSSIBILITES DE BETONNAGE DU CUVELAGE DES PUITS, tr. by Betri. 3 June 59 [15]p. Trans. no. X 57 (text in French).
Order from SLA mi$2.40, ph$3.30 CEA-tr-X57

Trans. in French of Przeglad Gorniczy (Poland) 1953 [v. 9] p. 96-100.

Murav'yev, I. M., Repin, N. N., and Lyushin, S. F.
CERTAIN CHARACTERISTICS OF FORMATION WATER INFLUX AFTER THE SHUT-DOWN OF FLOWING WELLS. [1959] 8p.
Order from ATS $10.75 ATS-20L31R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1959, v. 37, no. 1, p. 49-54.

Panov, M. P.
FIVEFOLD EFFECTIVENESS OF HYDRAULIC FRACTURING IN SILTSTONES. [1959] 5p.
Order from ATS $8.25 ATS-30L34R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1959, v. 37, no. 4, p. 63-67.

Rabinovich, V.
FIRE CHISEL, tr. by C. S. T. 23 July 59, 3p.
Order from LC or SLA mi$1.80, ph$1.80 59-18796

Trans. of Tekhnika Molodezhi (USSR) 1957, v. 25, no. 8, p. 26.

A reactive burner for boring holes with a flame is described. The basic part of this burner, a burning chamber, is a steel cylinder, on one side of which are arranged nozzles, while on the other, a jet device. Through the nozzles kerosene and oxygen enter the burning chamber. In order to start the burner working it is sufficient to bring a flame to the jet aperture. The fuel burning in the chamber results in a pressure of 20 to 25 atmospheres and a temperature on the order of 3500°. The burning chamber, together with the nozzles and jets, is encased in a metallic sheath.

Between the sheath and the chamber water circulates, cooling the burner. In tests, this device bored holes in samples of ferrous microquartzite of the Kursh magnetic anomaly at a speed of 9 meters per hour, and samples of red granite at 24 meters an hour.

Ros, Francisco Alvarez.
LE MERCURE DES MINES D'ALMADEN, tr. by Dirian. 20 Feb 59 [26]p. 9 refs. Trans. no. X 119 (text in French).
Order from SLA mi$2.70, ph$4.80 CEA-tr-X119

Trans. in French from Mineria y Metalurgia (Spain) 1957, [v. 2] 21 Jan. and 24 Feb.

This article contains historical data on the Almaden mines, which have been in operation for centuries. Various economic factors are enumerated which tend to place Spain in a monopolistic position in regard to the sale of mercury. Modern American equipment recently installed makes 95% extraction possible: old apparatus is held in reserve and could be put into operation if demand warranted it. Reference is made to mercurial poisoning and to the countermeasures practiced at the Almadén mines (e.g., rotation of miners to a state-owned farm). A short bibliography is included.

Trebin, F. A. and Shcherbakov, G. V.
SUGGESTIONS RELATIVE TO THE SIMPLIFIED METHOD FOR THE INTERPRETATION OF THE RESULTS OF PRESSURE RESTORATION IN WELLS, TAKING INTO ACCOUNT THE INFLUX OF FLUID AFTER THEIR SHUTDOWN. [1959] 4p.
Order from ATS $6.00 ATS-21L31R

Trans. of Neftyanoye Khoz[yaystvo] (USSR) 1959, v. 37, no. 1, p. 55-57.

Aeronautical Engineering

AIRCRAFT INDUSTRY OF ROMANIA. 30 Jan 59 [49]p. (37 figs. omitted) 56 refs. AF 1255459.
Order from LC or SLA mi$3.30, ph$7.80 59-12950

Trans. of open sources pub. in Romania, United States, England, Germany, etc. 1939-1958.

CONTRACT TERMS FOR THE DELIVERY AND ACCEPTANCE OF CAST STEEL AIRCRAFT COMPONENTS [AND] GENERAL INSTRUCTIONS FOR TESTING STEEL CASTINGS. Rept. no. 2 on Aircraft Steel Castings: Conditions of Acceptance and Testing. [1959] 10p. R. T. P. Trans. no. 2536 a.
Order from SLA mi$1.80, ph$1.80 59-17672

Trans. of mono. issued by Annener Gusstahlwerke A. G., 1938, 1 Dec. and 1940, 1 Jan.

SERIAL PRODUCTION OF THE IL-18. 22 May 59 [4]p. 20 refs. AF 1255825.
Order from LC or SLA mi$1.80, ph$1.80 59-22192

Compiled from Soviet and US open sources, 1957-1959.

The IL-18 turboprop "Moskva" is the latest model of the IL series produced by S. V. Il'yushin, who has been designing commercial airliners since the end of World War II. It is estimated that 37 IL-18 airliners have now been built. Test flights are reported.

Bertinov, A. I. and Riznik, G. A.
TECHNICAL CHARACTERISTICS OF SOVIET AIRCRAFT DIRECT CURRENT MACHINES AND THE MATERIALS USED FOR THEIR CONSTRUCTION. 21 July 59 [44]p. AF 1255952.
Order from LC or SLA mi$3.30, ph$7.80 59-19723

Trans. of mono. Proyektirovaniye Aviatsionnykh Elektricheskikh Mashin Postoyannogo Toka, (Designing of Aviation Electric Direct Current Machines) Moscow, 1958, p. 5-8, 10-12, 119-146, 399 and 407-409.

Fono, Albert.
AIR JET ENGINE FOR HIGH-ALTITUDE FLIGHT. 9 July 59, 4p. (3 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18787

Trans. of German patent 554906, cl. 46 d, gr. 17, pat. 26 May 28, pub. 2 Nov 32.

The air jet engine for high flying airplanes with supersonic speeds consists of a body, horizontal in the direction of motion, which has an air inlet opening in front, a compression nozzle with fuel intake and ignition close to the point of highest pressure, and finally an expansion nozzle. The cross section of the combustion nozzle is tapered initially in the direction of flow. A compressor is installed in the narrowest cross section.

Novikov, A.
FROM A LOW ALTITUDE AT NIGHT (Noch'yu Maloy Vysoty). 15 Jan 59 [2]p. AF 1255435.
Order from LC or SLA mi$1.80, ph$1.80 59-22204

Summary trans. from Sovetskaya Aviatsiya (USSR) 1958, no. 271, p. 3.

Schmidt, F. R.
THE INDUCTION AND DISCHARGE PROCESS AND LIMITATIONS OF POPPET VALVE OPERATION IN A 4-STROKE AERO ENGINE. [1959] 45p. (refs. omitted) R. T. S. Trans. no. 2495.
Order from SLA mi$3.30, ph$7.80 59-17690

Trans. of Luftfahrtforschung (Germany) 1939, v. 16, no. 5, p. 251-275.

Smirnov, V.
HIGH-ALTITUDE BOMBING (Bombometaniye s Bol'shikh Vysot). 7 Jan 59 [2]p. AF 1255405.
Order from LC or SLA mi$1.80, ph$1.80 59-22207

Summary trans. from Sovetskaya Aviatsiya (USSR) 1958, no. 232, p. 2.

Vishnyakov, A.
INTERCEPTION OF AERIAL TARGETS IN THE STRATOSPHERE (Perekhvatyvaya Tseli v Stratosfere). 26 Jan 59 [2]p. AF 1255475.
Order from LC or SLA mi$1.80, ph$1.80 59-22201

Summary trans. from Sovetskaya Aviatsiya (USSR) 1958, no. 290, p. 2.

Volodin, I.
SEARCH AND ATTACK IN THE STRATOSPHERE (Poisk i Ataka v Stratosfere). 14 Jan 59 [3]p. AF 1255424.
Order from LC or SLA mi$1.80, ph$1.80 59-22205

Trans. from Sovetskiy Flot (USSR) 1958, no. 277, p. 2.

Chemical Engineering

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. KHIMIYA I KHIMICHESKAYA TEKHNOLOGIYA (USSR) 1959, VOL. 2, NO. 1. P. 3-146 (News of the Institutes of Higher Learning. Chemistry and Chemical Technology). [1959] 1v. SOV-153-2-1-(1-25)/25.
Order from OTS $1.00, $5.50/year PB 141 056T-7
Foreign $1.25, $7.00/year

Consists of abstracts in English.

KHIMICHESKAYA NAUKA I PROMYSHLENNOST' (USSR) 1958, VOL. 3, NO. 6, P. 690-841 (Chemical Science and Industry). [1959] 1v. SOV-63-3-6-(1-43)/43.
Order from OTS $0.70, $4.00/year PB 141 058T-1
Foreign $0.95, $5.50/year

Consists of abstracts in English.

KHIMICHESKAYA PROMYSHLENNOST' (USSR) 1959, NO. 2, P. 93-185 (Chemical Industry). [1959]1v. SOV-64-59-2-(1-23)/23.
Order from OTS $0.60, $2.25/6 mo. PB 141 059T-10
Foreign $0.85, $3.25/6 mo.

Consists of abstracts in English.

KHIMIYA I TEKHNOLOGIYA TOPLIV I MASEL (USSR) 1959 [V. 4] NO. 4, P. 1-72 (Chemistry and Technology of Fuels and Oils). [1959] [21 p.] SOV-65-59-4-(1-14)/14.
Order from OTS $0.50, $3.00/6 mo. PB 141 060T-11
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

KISLOROD (USSR) 1959 [V. 12] NO. 2, P. 1-55 (Oxygen). [1959] [20]p. [SOV]-67-59-2-(1-18)/18.
Order from OTS $0.60, $3.50/year PB 141 062T-9
Foreign $0.85, $5.00/year

Consists of abstracts in English.

NEFTYANIK (USSR) 1959, NO. 2, P. 1-35 (Petroleum Worker). [1959] 1v. SOV-92-59-2-(1-40)/40.
Order from OTS $0.60, $3.50/6 mo. PB 141 085T-14
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

PROCESS FOR PRODUCTION OF THERMALLY UNSTABLE HYDRIDES. [1959] 7p. (3 figs. omitted). Pa-569.
Order from LC or SLA mi$1.80, ph$1.80 59-20184

Trans. of German patent application M 20249 (12i, 1/01) 28 Oct 54, by Metallgesellschaft Aktiengesellschaft, Frankfurt/Main.

Thermally unstable hydrides are obtained in good yield from hydride-formers, inert towards hydrogen, such as boron, phosphorus, aluminum, germanium, especially silicon, and atomic hydrogen, if one activates gases, containing hydrogen, resp. hydrocarbons, by means of a hot, powerful, high-voltage electric arc, reacting them with the hydride-formers during or after this activation, and preventing the thermal decomposition of the reaction products after their formation by quick, intensive cooling. Fair amounts of the hydrogen compounds, which form the basis of the invention, may only be obtained in extremely large apparatus. The power density of the arc should be as large as possible, e.g., at least partially, 0.1 kw per cc of discharge space, preferably 10 kw per cc of discharge space, in order that as high a concentration of hydrogen atoms or ions should form. The high-tension electric arc burns between hot electrodes of difficulty fusible material which accelerates the dissociation of the hydrogen, for example, electrodes of tungsten. The gas vortex-stabilized direct current arc burns between cooled electrodes of great length, preferably 1 m, of high dc voltage, preferably 7000 v, of large current intensity, preferably 1000 amp, and of high gas velocity, preferably 1000 m/sec (at an average gas temperature of 1500°).

*ZHURNAL PRIKLADNOY KHIMII (USSR) 1959 [VOL. 32] NO. 3, P. 473-704 (Journal of Applied Chemistry). [1959] 1v. SOV-80-32-3-(1-43)/43.
Order from OTS $0.90, $5.00/6 mo. PB 141 076T-3
Foreign $1.15, $6.50/6 mo.

Consists of abstracts in English.

Agafonov, A. V., Abayeva, B. T. and others
CATALYTIC CRACKING OF RAW AND HYDROGEN-TREATED VACUUM GAS OIL FROM ARLAN CRUDE (Kataliticheskiy Kreking Iskhodnogo i Gidroochishchennogo Vakuumnogo Gazoylya Arlanskoy Nefti). [1959] 11p.
Order from ATS $12.95 ATS-95L33R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959, v. 4, no. 4, p. 18-24.

Birthler, R., Deutloff, E. and others.
HYDROCRACKING OF HIGH-ASPHALT-CONTENT CRUDES AND TARS IN AN INTERMEDIATE PRESSURE KOMBI [TWIN] CHAMBER ACCORDING TO THE VARGA PROCESS. [1959] 7p.
Order from ATS $8.85 ATS-38L33G

Trans. of Erdol u[nd] Kohle (West Germany) 1959, v. 12, no. 2, p. 71-73.

Buznikov, Ye. F.
ANALYSIS OF THE OPERATION AND CHOICE OF THE TYPE AND DIMENSIONS OF VERTICAL CENTRIFUGAL STEAM SEPARATORS, tr. by J. B. Sykes. 1955 [13]p. 1 ref. A. E. R. E. Lib/Trans. 560.
Order from SLA mi$2.40, ph$3.30 59-17479

Trans. of Za Ekonomiyu Topliva (USSR) 1951, v. 1, p. 8-14.

The nature of the mechanism of centrifugal separation of water in a vertical separator is discussed. The analysis indicates that the type of separator with two levels is the most efficient. Such a separator allows a great increase in the lead of the steam volume and ensures a high-quality decontamination of the steam because of the possibility of using higher values of the ratio of entry and axial velocities ($U/W_0 = 10$ to 30). It is not economical to obtain a satisfactory quality of steam in separators where the steam and water mixture is admitted directly to the level required.

Keller, A. A.
EXPANSION OF THE SOVIET OIL REFINING INDUSTRY IN POST-WAR YEARS. 16 Dec 58 [4]p. AF 1187430.
Order from LC or SLA mi$1.80, ph$1.80 59-22195

Trans. of selected passages from mono. Neftyanaya i Gazovaya Promyshlennost' SSSR v Poslevoyennyye Gody, 1958, p. 49-52 and 54-55.

Dinelli, D.
A METHOD FOR THE GRAPHICAL CALCULATION OF THE NUMBER OF THEORETICAL PLATES IN AN ELECTROLYTIC PLANT WITH EXCHANGE TOWERS FOR THE PRODUCTION OF HEAVY WATER, tr. by J. B. Sykes. 1955 [13]p. A.E.R.E. Lib/Trans. 606.
Order from SLA mi$2.40, ph$3.30 59-17523

Trans. of Energia Nucleare (Italy) 1955, v. 2, no. 16, p. 426-433.

In an electrolytic plant with towers for the recovery of deuterium by exchange reactions between the hydrogen and the water vapour, the number of theoretical plates needed at each stage to produce a given enrichment can easily be calculated graphically. In this article by Professor Dino Dinelli, of the Institute of Applied Chemistry, University of Rome, the fundamental equations for a plant of this type are set up for the general case of any deuterium concentration and the procedure for graphical calculation is described, both for the case of small concentrations and for that of medium concentrations; it is similar to that used in distillation technology to determine the number of theoretical plates. (AERE abstract)

Eck, B.
NEW APPARATUS FOR STIRRING LIQUIDS. [1959] 4p.
Order from ATS $4.75 ATS-15L34G

Trans. of Chem[ie]-Ing[enieur]-Tech[nik] (West Germany) 1959, v. 31, no. 4, p. 260-261.

Ishkin, I. P. and Katina, N. F.
THE ADSORPTIVE SEPARATION OF ACETYLENE AND CARBON DIOXIDE FROM AIR IN INDUSTRIAL GASEOUS AND LIQUID OXYGEN PLANTS (Adsorptsionnaya Ochistka Vozdukha ot Atsetilena i Dvuokisi Ugleroda na Ustanovkakh Tekhnicheskogo Gazoobraznogo i Zhidkogo Kisloroda). [1959] 2p.
Order from ATS $4.00 ATS-16L34R

Trans. of Kislorod (USSR) 1959, v. 12, no. 2, p. 37-38.

Iskhakov, Kh. A.
THERMOGRAPHIC INVESTIGATIONS OF COALS AND COAL MIXTURES. [1959] [6]p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18382

Trans. of Koks i Khimiya (USSR) 1957, no. 7, p. 6-8.

Thermograms of wood, sapropelic coals, and ordinary coals are presented which were taken under the following experimental conditions. Mirror galvanometers, type M25/12, sensitivity 10^{-9} am. mm/m were used for recordings. The resistance of the differential nickel-nichrome thermocouple was 10,000 ohms. The average heating rate was 10^{0}/min. The experiments were carried out in a nitrogen atmosphere, with moisture and oxygen removed before its admission to the furnace. The experimental charges were 0.2-0.7 gm, and MgO, Al_2O_3, and coke were used as reference materials. The thermograms show that the ex-

othermic reaction which begins at 180°C turns sharply into endothermic at 260°C. and this seems contradictory at first sight. The same phenomenon is observed with regard to sapropelic coals. For instance, it is known that the Barzass coal has a characteristic narrow temperature zone of 26°C. (424°C. -450°C.) when the disintegration of its organic mass becomes violent; this may point out the exothermic property of the coal.

Jenkner, Herbert and Schmidt, Hans Werner.
METHOD FOR THE PRODUCTION OF ALKYL COMPOUNDS. [1959] 2p. Pa-570.
Order from LC or SLA mi$1.80, ph$1.80 59-20183

Trans. of Addition to German patent application K20071 (IV b/120) 29 Aug 57, by Kali Chemie Aktiengesellschaft, Hannover.

The present extension of the procedure of patent application K20071 IV b/120 for the production of alkyl compounds of the elements of the 2nd to 5th group of the periodic system is characterized by the fact that boron fluoride or complex fluorides of boron are reacted with aluminum alkyl fluorides, suitably at increased temperature.

Karaulova, Ye. N. and Gal'pern, G. D.
AN OXIDATION METHOD FOR THE SEPARATION OF SULFIDES FROM THE INTERMEDIATE FRACTIONS OF CRUDE OIL (Okislitel'nyy Metod Vydeleniya Sul'fidov iz Srednikh Fraktsiy Nefti). [1959] 5p.
Order from ATS $6.00 ATS-36L34R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 124, no. 3, p. 583-585.

Kazarnovskiy, S. N. and Shvetsova, Z. N.
MELAMINE, ITS PROPERTIES AND METHODS OF PRODUCTION (Melamin, Yego Svoystva i Sposoby Polucheniya). [1959] 10p.
Order from ATS $18.75 ATS-37L34R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1958, no. 6, p. 325-330.

Kocheshkov, A. A.
EFFECT OF PRESSURE ON THE CAPILLARY DISPLACEMENT OF A HYDROCARBON LIQUID FROM A POROUS MEDIUM BY WATER. [1959] 8p.
Order from ATS $13.15 ATS-28L34R

Trans. of Izvest[iya] Vysshykh Ucheb[nykh] Zaved-[eniy]. Neft' i Gaz (USSR) 1959, no. 2, p. 59-65.

Kraus, Th.
THE RATE OF PUMPING-DOWN IN HIGH VACUUM SYSTEMS. [1959] 9p.
Order from ATS $11.85 ATS-06L34G

Trans. of Vakuum-Technik (Germany) 1959, v. 8, no. 2, p. 39-43.

Malyusov, V. A., Umnik, N. N. and others.
MOLECULAR RECTIFICATION (Molekulyarnaya Rektifikatsiya) 22 Oct 57 [6]p. (3 figs. 2 tables omitted). M-V. Trans. no. 2373; M. 5.
Order from LC or SLA mi$1.80, ph$1.80 59-18628

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 109, no. 4, p. 828-831.

A method of separating thermally unstable mixtures into individual components is described, which is carried out in a high vacuum.

Ohashi, K., Suzuki, S., and Ito, H.
SYNTHESES OF ACRULATES WITH NICKEL CARBONYL. I. METHOD OF SYNTHESIS AND WASTE GAS. [1959] 4p.
Order from ATS $6.75 ATS-89L33J

Trans. of Kogyo Kagaku Zasshi (Japan) 1952, v. 55, p. 120-121.

Peters, Werner.
YIELDS IN FAST DEVOLATILIZATION. [1959] 29p. 11 refs.
Order from SLA mi$2.70, ph$4.80 59-20043

Trans. of GWF; das Gas- und Wasserfach (West Germany) 1958, v. 99, no. 41 [p. 1045-1054]. Another translation is available from SLA mi$3.00, ph$6.30 as 59-10852 [1959] [37]p.

A previous study (Gas- u. Wasserfach 98: 517, 1957 or technical translation 59-15064) on fast devolatilization as a function of time was continued by measuring the yields, in a continuously operating laboratory apparatus for fast devolitilization, of a gas flame coal (Leopold Mine) at different temperatures between 470° and 950°C and of 6 other hard coals of different degrees of coalification at a carbonization temperature of 600°C. The yields reported differ considerably from those of a retort for low-temperature carbonization, as is to be expected from the previous hypothesis that the primary process of fast devolatilization is vaporization.

Rozengart, M. I. and Kazanskiy, V. A.
DEHYDROCYCLIZATION OF N-HEPTANE ON ALUMINA-CHROMIA CATALYSTS. [1959] 5p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20144

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1958, v. 119, no. 4, p. 716-719.

Other translations are available from ATS $5.50 as ATS-68K26R [1958] 6p.; from LC or SLA mi$1.80, ph$1.80 as 59-15116, 1958, 10p.; and from CB $5.00, 1958 [4]p.

Experiments on the dehydrocyclization of n-heptane showed that catalysts can be prepared which work uninterruptedly, without regeneration, for a period amounting to 27 hours, ensuring an average yield of 67% by weight of aromatics over this period. After 100 hours of operation with periodic regenerations, the duration of the working period of these catalysts

dropped to 10 to 12 hours and did not change further in the course of the following 115 to 117 hours of work. After 215 to 217 hours of operation, the surface of the catalysts decreased by a factor of three, and the pore-volume by a factor of one and a half. During this time, the change in the over-all yield of the reaction products and the yield of toluene as referred to the heptane that was passed over the catalyst was insignificant. Presumably one of the causes of this phenomenon is that under the conditions (515°C, space velocity 0.3 hr. $^{-1}$) the reaction of dehydrocyclization over active catalysts does not take place in a kinetic zone, but in a diffusion zone. Experiments with samples of a catalyst of different granulation confirmed this assumption.

Shevlyakov, A. S., Yetlis, V. S. and others.
PREPARATION OF ISOTACTIC POLYSTYRENE.
[1959] [4]p. (1 fig. omitted) 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15757

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 122, no. 6, p. 1076-1078.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as 59-10539 [1959] 4p.

The reaction conditions suitable for commercial production for the stereo specific polymerization of styrene are provided. The velocity of the polymerization and the yield of the isotactic fraction of the polymer are a function of the concentration of the aluminum triethyl in the diluent (gasoline of the brand "Kalosh") In regard to the particular mechanism of the stereo specific polymerization, the molar ratio $K=Al(C_2H_5)_3$: $TiCl_3$ has a very pronounced effect on the yield and the properties of the polymer. The yields of the isotactic fraction and of the amorphous fraction in the polymer are functions of the reaction temperature. An increase in the total yield of polystyrene occurs only due to an increase in the yield of the amorphous fraction. The yield of the isotactic fraction, based on amount of titanium trichloride, is practically not changed. If the ratio of C_8H_8:$TiCl_3$ is increased from 10 to 15, the proportion of the amorphous fraction in the polymer rises 1.55 to 2 times. The constant yield of the isotactic product can be accounted for by the constant size of the active surface of the catalyst on which the isotactic polymer is formed. The formation of the amorphous product is apparently not linked to surface effects and occurs in the homogeneous solution following an ionic mechanism. According to the above-described method, polystyrene can be obtained, depending upon the conditions of the reaction, either almost completely in the crystallized form (98.5 to 100%) or with a major content of the amorphous fraction.

Stange, K.
THE DEGREE OF MIXING IN A RANDOM MIXTURE AS THE BASIS FOR EVALUATING MIXING EXPERIMENTS. [1959] 37p. 4 refs.
Order from SLA mi$3.00, ph$6.30 59-20132

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1954, v. 26, no. 6, p. 331-337.

The limit value of the degree of mixing that can be asymptotically attained by a mixing device may deviate from that of a random mixture. The smaller these deviations are and the sooner the mixer produces the final state, the better is that mixer. The author investigates in which manner the degree of uniformity of a random mixture of granular material depends upon the different factors that affect it, namely the relative proportions by weight of the components of the mixture, the degree of fineness, the uniformity of fineness, as well as the size of the samples taken at random. The functional correlation discovered includes a few special cases already known from the literature. It is tested by means of experiments with molding sand, in which the results obtained agreed substantially with the calculated data.

Suzuki, S., Yonezawa, M. and others.
SYNTHESES OF ACRYLATES WITH NICKEL CARBONYL. II. REACTION CONDITIONS AND PRODUCTS. [1959] 4p.
Order from ATS $8.15 ATS-90L33J

Trans. of Kogyo Kagaku Zasshi (Japan) 1952, v. 55, no. 9, p. 607-608.

Suzuki, S., Uno, K. and others.
SYNTHESES OF ACRYLATES WITH NICKEL CARBONYL. III. REACTION CONDITIONS AND PRODUCTS (CONTINUED). [1959] 4p.
Order from ATS $8.65 ATS-91L33J

Trans. of Kogyo Kagaku Zasshi (Japan) 1952, v. 55, no. 11, p. 718-720.

Tadema, H. J.
OIL PRODUCTION BY UNDERGROUND COMBUSTION. [1959] 8p.
Order from ATS $13.75 ATS-97L33G

Trans. of Erdöl und Kohle (West Germany) 1959, v. 12, no. 3, p. 140-144.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-20047 [1959] 11p.

Tadema, Harco J.
OIL RECOVERY BY UNDERGROUND COMBUSTION. [1959] 11p.
Order from SLA mi$2.40, ph$3.30 59-20047

Trans. of Erdöl und Kohle (West Germany) 1959, v. 12, no. 3, p. 140-144.

Field experiments have proved the technical practicability of oil recovery by means of underground combustion. The mechanism of combustion "in situ" was investigated through laboratory experiments. A model was developed which is capable of explaining the most important phenomena, at least qualitatively. By interaction of flow of material, heat transport, and chemical reaction, this mechanism is able to expel the oil very effectively from the petroliferous stratum.

Trey, F.
BASIS OF CALCULATION FOR HEATING OF OIL-BEARING ROCK STRATA TO INCREASE YIELD. [1959] 5p.
Order from ATS $9.25 ATS-44L34G

Trans. of Erdöl u[nd] Kohle (West Germany) 1959. v. 12, no. 4, p. 216-218.

Wietzel, G.
FATTY ACID SYNTHESIS BY OXIDATION OF HYDROCARBONS, tr. by F. H. B. 29 Jan 59, 22p. (9 figs. omitted) 3 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-12937

Trans. of Angewandte Chemie (West Germany) 1938 [v.]51, no. 32, p. 531-537.

Wu, Jen-chieh and Ch'ien, Jen-yuan.
THE POISONOUS GAS ALARM. 15 Sep 59, 2p. (2 figs. omitted) 4 refs. JPRS: L-1865-D.
Order from OTS $0.50 59-11791

Trans. of K'o Hsueh T'ung Pao (Chinese People's Republic) 1959, no. 4, p. 126-128.

Yamazaki, Takáo, Hirasawa, Hideo, and Nomura, Seiichi.
METHOD OF PREPARING CYCLOHEXYLAMINE FROM ANILINE. [1959] [6]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17364

Trans. of Japanese patent 174320, cl. 145 [gr.] 2, appl. no. 12148, 1944, appl. date 14 Dec 44, date of pat. grant 16 Dec 46, by Mitsui Kagaku Kogyo, Tokyo.

The invention presents a method of preparing cyclohexylamine from aniline by using a catalyst composed mainly of reduced nickel-diatom earth, combined with one or two metals or metal oxides of the first group elements in the periodic table, e. g. , lithium, sodium, copper, etc. , or of the second group elements, e. g. , barium, magnesium, cadmium, etc. , at temperatures of 150 to 250°C, and by passing a mixture of aniline and di-cyclohexylamine, the latter in quantity of about 10 to 70% of the quantity of aniline, with hydrogen through the catalyst under normal pressures. Its purpose is to prepare cyclohexylamine by adding hydrogen to aniline with little difficulty, with production at normal pressures equalling any prepared by the high-pressure methods.

Civil Engineering

BETON I ZHELEZOBETON (USSR) 1958, NO. 10, P. 361-400 (Concrete and Reinforced Concrete). [1959] 1v. SOV-97-58-10-(1-17)/17.
Order from OTS $0.50, $3.00/6 mo. PB 141 090T-14
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

SOCIETY FOR CULTURAL RELATIONS WITH THE U. S. S. R. BULLETIN OF THE ARCHITECTURE & PLANNING GROUP, 1952, NO. 31. 10p.
Order from LC or SLA mi$1.80, ph$1.80 59-19096

Contents:
1. Some Personal Impressions of the New High Buildings in Moscow, by F. W. B. Charles.
2. Hydro-phobic Cement, by A. Chuiko. Partial trans. of Nauka i Zhizn (USSR) 1951 [v. 18] no. 10, p. 39. M. 202.
3. Hydro-phobic Cement. Trans. from Vechernaya Moskva (USSR).

SOVIET CONSTRUCTION AND BUILDING MATERIALS INDUSTRY: SELECTED TRANSLATIONS. 4 Sep 59, 40p. (4 figs. omitted) 14 refs. JPRS: 1866-N.
Order from OTS $1.25 59-13852

Trans. of selected articles from 9 Russian periodicals.

Excerpts from:
Basic results in construction during 1958, by A. Ginzburg
[Pledges of] pre-term fulfillment of 7-year construction plan, unsigned article
Organize control over the fulfillment of Socialist obligations, unsigned article
Four-month results [towards fulfillment of the plan of construction and installation work in new production shops of existing cement plants], unsigned article
Increase the use of prestressed concrete, by M. V. Kiselelev
Building experience with silica blocks, by T. P. Feofilova
More high quality roofing materials, unsigned article
Problems in the development of roof tile production, by S. A. Patrick
Corrugated roofing for rural construction, by S. I. Kabro
Industrialization of thermal insulation operations in 1959-1965, by G. F. Kuznetsov
House of plastic, by K. N. Agafonov, et al
Something new in Leningrad housing construction, by N. Rodionov
Some problems in making standard designs for thermal electric power stations, by A. A. Sedov
Build open-type thermal electric power stations, by L. A. Ludkevich
(See also 59-13569, 59-13713, 59-13724)

TSEMENT (USSR) 1959 [VOL. 25] NO. 3, P. 1-32 (Cement). [1959] [10]p. SOV-101-59-3-(1-10)/10.
Order from OTS $0.50, $3.00/year PB 141 094T-8
Foreign $0.75, $4.50/year

Consists of abstracts in English.

Electrical and Electronic Engineering

A-6 PRECISION EQUIPMENT PLANT IN SWIDNICA. 26 June 59 [7]p. (5 figs. omitted) 9 refs. AF 1255909.
Order from LC or SLA mi$1.80, ph$1.80 59-18455

Trans. from open sources pub. in Poland, Germany and the USSR, 1941-1958.

ELECTROCONDUCTIVE FILM FOR BIPOLAR-TYPE GALVANIC BATTERIES. [1959] [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17107

Trans. of Norwegian patent 72162, description pub. 2 June 47, pat. since 17 Nov 44 (Priority: Germany, 18 Nov 43, date filed in Germany) by Pertrix-Werke Limited Company, Berlin, Germany, represented by Tom Bryn of Bryns Patentkontor, Inc., Oslo.

According to the present invention, the conductive layer is a film prepared separately from a mixture of synthetic thermoplastic materials with electrically conductive carbon preparations. The said mixture can be rendered perfectly homogeneous by using a roller mixing equipment, after which the mixture, without being displaced, can be reduced to a thin film upon a roller machine. The product is free of defects such as those shown by conductive coatings made of conductive varnishes, viz. the appearance of porosities, deterioration of the mixture in the process of hardening, and finally the large consumption of solvents. (Extracted from the report)

*ELEKTRICHESTVO (USSR) 1959, NO. 5, P. 1-96 (Electricity). [1959] 1v. SOV-105-59-5-(1-29)/29.
Order from OTS $0.80, $4.50/6 mo. PB 141 098T-13
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

*ELEKTROSVYAZ' (USSR) 1959 [V. 13] NO. 3, P. 3-96 (Electrical Communications). [1959] [22]p.
SOV-106-59-3-(1-12)/12.
Order from OTS $0.60, $3.50/6 mo. PB 141 099T-14
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

ENERGETICHESKIY BYULLETEN' (USSR) 1958, NO. 1, P. 1-32 (Power Engineering Bulletin). [1959] [7]p. SOV-90-58-1-(1-9)/9.
Order from OTS $0.50, $3.00/6 mo. PB 141 083T-12
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. ELEKTROMEKHANIKA (USSR) 1958. (News of Institutes of Higher Learning, Electromechanics).
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

No. 7, p. 3-130, PB 141 101T-4
No. 8, p. 3-141, PB 141 101T-1

Consists of abstracts in English.

MARIUS LATOUR SYSTEM DIRECT CURRENT DYNAMO WITH CONSTANT VOLTAGE AND VARIABLE SPEED (Dynamo à Courant Contino à Tension Constante et à Vitesse Variable, Système Marius Latour). [1946] [3]p. (6 figs. omitted). No. 152.
Order from LC or SLA mi$1.80, ph$1.80 59-17947

Trans. of Revue Générale de l'Électricité (France) 1924, v. 15 [no. 3] p. 97-99 (French patent 558,063, delivered 16 May 23, pub. 21 Aug 23).

NAUCHNYYE DOKLADY VYSSHEY SHKOLY. ELEKTROMEKHANIKA I AVTOMATIKA (USSR) 1958, NO. 2, P. 3-241 (Scientific Reports of Higher Schools, Electromechanics and Automation). [1959] 1v. SOV-161-58-2-(1-30)/30.
Order from OTS $0.70, $2.50/year PB 141 102T-2
Foreign $0.95, $3.50/year

Consists of abstracts in English.

RADIO ENGINEERING, 1958, VOL. 13, NO. 10. Aug 59, 117p.
Order from PP $30.00/year ($15.00/year to individuals)

Trans. of Radiotekhnika (USSR) 1958, v. 13, no. 10, p. 3-80.

RADIO ENGINEERING AND ELECTRONICS, 1958, VOL. 3, NO. 9, July 59, 177p.
Order from PP $45.00/year ($22.50/year to individuals)

Trans. of Radiotekhnika i Elektronika (USSR) 1958, v. 3, no. 9, p. 1107-1222.

*RADIOTEKHNIKA I ELEKTRONIKA (USSR) (Radio Engineering and Electronics). [1959]
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

V. 3, no. 9, 1958, p. 1107-1224, PB 141 106T-16
V. 4, no. 5, 1959, p. 735-908, PB 141 106T-17

Consist of abstracts in English.

TELEALARM EXCHANGES. [1959] 18p. (7 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-15586

Trans. of Haute Precision AOIP (France) 1954, no. 3, p. 2-6.

The over-all characteristics of telealarm control centers of the Paris Fire Department are described and compared with those of the equipment of the compact type alarm systems.

VESTNIK ELEKTROPROMYSHLENNOSTI (USSR) 1959 (Herald of the Electrical Industry).
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 4, p. 1-80, PB 141 107T-16
No. 6, p. 1-18, PB 141 107T-15

Consists of abstracts in English.

Ambrosius, F.
TELEPHONY IN THE YEAR 1914 (JULY TO SEPTEMBER). [1959] 6p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15883

Trans. from Helios (Germany) 1915, v. 21, no. 11.

Andryanov, K. A. and Kalitvyanskiy, V. I.
THE USE OF SILICONE INSULATION IN ELECTRICAL ENGINEERING (Primeneniye Kremnilorganicheskoy Izolyatsii v Elektricheskikh Mashinakh).
22 Sep 55 [11]p. (13 figs. 11 refs. omitted) M-V. Trans. no. 2124; M. 32.
Order from LC or SLA mi$2.40, ph$3.30 59-18655

Trans. of Elektrichestvo (USSR) 1955, no. 4, p. 62-68.

Data obtained from the testing of organo-silicone insulation and also an operational test of electrical machines with organo-silicone insulation give bases for the following conclusions. Organo-silicone insulation maintains a high level of the dielectric characteristics up to 200°C. During the prolonged influence of increased temperatures on organo-silicone insulation, it maintains mechanical and dielectric characteristics at a level guaranteeing safe working under the heaviest operational conditions. Organo-silicone insulation possesses a high moisture and water resistance both in the original state and after prolonged reaction of increased temperatures (180° - 200°C). Long heating up to 180°C and temporary heating up to 230° - 250°C is permissible for organo-silicone insulation. Organo-silicone insulation is fireproof, arc resistant and corona resistant. The application of organo-silicone insulation to electrical machines permits (1) considerable improvement in safety and the life of the insulation under the heaviest operational conditions; and (2) a reduction in the dimensions and specific weight of electrical machines. Taking into account the relatively high cost of organo-silicone insulation, it must, in the first instance be used in such electrical machines where the use of this insulation provides a technical - economical influence, in the coal and metallurgical industries, and electrified transport, etc.

Bal'yan, R. Kh.
THE CALCULATION OF A LARGE ROTOR (K Raschetu Massivnogo Rotora). 7 Dec 55 [26]p. 8 refs. (foreign text included) M-V. Trans. no. 2139; M. 31.
Order from LC or SLA mi$2.70, ph$4.80 59-18654

Trans. of Elektrichestvo (USSR) 1955, no. 6, p. 25-32.

The article aims at giving a simple engineering method of calculation of electrical machines with a large forre-magnetic rotor. Two particular problems are presented. The theroy is based on the investigation of the process of permeation of electro-magnetic waves from the stator windings into the body of the rotor. (Metropolitan-Vickers abstract)

Bardizh, V. V. and Vizun, Yu. I.
PROBLEMS OF THE TECHNOLOGY OF THE PRODUCTION OF SMALL TAPE-WOUND MAGNETIC CORES. [1959] [8]p. (6 figs. omitted) M. 158.
Order from LC or SLA mi$1.80, ph$1.80 59-18766

Trans. of unidentified mono. pub. by the Inst. of Precision Mechanics and Computing Technique, Moscow, 1957.

The basic processes of the production of small magnetic cores from thin tapes are discussed. The essential equipment used for the experimental production of such cores in the Institute of Precision Mechanics and Computing Technique, Academy of Sciences, USSR, is described. (Author)

Bondarenko, V. M. and Pukhov, G. E.
ON A NUMERICAL METHOD FOR CALCULATING ELECTRIC CIRCUITS (ob Odnom Chislennom Metode Rascheta Nekotorykh Elektricheskikh Tsepey).
11 Arp 58 [4]p. (10 figs. 4 equations, 4 refs. omitted) M-V. Trans. no. 2439; M. 36.
Order from LC or SLA mi$1.80, ph$1.80 59-18659

Trans. of *Elektrichestvo (USSR) 1957, no. 8, p. 44-46.

A method is suggested which makes it possible to calculate of a given class of electric circuits, not only without joint resolution of a large system of equations but also without material conversion of the circuit. By this method it is impossible to obtain a resolution in the general form, but on the other hand it is possible to find numerical values of currents easily. (See also 59-18658)

Borisovskiy, S. P.
OPERATOR'S POST FOR OPERATING RADIO-COMMUNICATION CHANNELS. 25 Aug 59, 5p. (2 figs. omitted). JPRS: L-923-D.
Order from OTS $0.50 59-11609

Trans. of Vestnik Svyazi (USSR) 1958, no. 1, p. 7-9.

In the beginning of 1956 the radio bureau of the MDRSV [Moskovskaya direktsiya radiosvyazi i radioveshchaniya--Moscow Directorate of Radio Communications and Radio Broadcasting] introduced a new operator's post for ORK [Obsluzhivaniye kanalov radio-

svyazey--operating radio channels]. The individual ORK operator's post includes two standard stands with control devices, commutation equipment, and tables with office-communication equipment. This ORK equipment is for a radio bureau serving not more than 10 radio-communication lines simultaneously. (A radio bureau serving more ORK radio communications consists of two individual ORK posts, interconnected and manned by two operators.) The essential characteristic of the ORK operator's post consists in the fact that here are united all the functions connected with ORK: (1) commutation and preparation of the routes of radio communication; (2) control of the work of transmission and reception routes and the entire radio-communication line; and (3) official conversations with corresponding stations. These functions are carried out independently of the telegraph operator's position.

Brandenberger, Jacques Edwin.
INSULATING MATERIAL FOR PIECES OR CABLES CONDUCTING ELECTRICITY. 25 May 54 [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17856

Trans. of French patent 433,999 [gr.] XII [cl.] 6, appl. 12 Nov 1910, issued 13 Nov 11, pub. 20 Jan 12.

The insulating material, consisting of sheets of cellulose or cellulosic films, is obtained by starting directly from any aqueous solution of cellulose and, in particular, from a solution of cellulosic sodium xanthate (viscose). These sheets of cellulose are employed, either alone or after sticking several sheets together, with or without an exterior coat formed by one or several layers of linseed oil, of a solution of rubber, or of any insulating varnish. Instead of using ordinary cellulose sheets, cellulose sheets can be used which have been so treated as to present a surface covered with fatty ethers of cellulose, either nitrated or acetylated superficially. A kind of varnish is thus obtained through such a superficial etherification, which envelopes closely the cellulose sheet with an insulating layer free from any porosity. The sheets thus obtained can be used as such as insulating material, or they can be stuck together and coated like sheets of pure cellulose.

Ch'u, Chih-hsien [and others].
MANUFACTURE AND MAINTENANCE OF ELECTRONICS EQUIPMENT: SELECTED ARTICLES. 6 May 59, 13p. JPRS: 1548-N.
Order from OTS $0.50 59-13491

Trans. of Wu-Hsien-tien (Chinese People's Republic) 1958, no. 12, p. 4-6, 18-19.

Contents:
A review of domestic receivers (an unsigned article)
Classification and basic parameters of electron-tube receivers (an unsigned article)
Troubles and repair of semiconductor thermocouple generators, by Chih-hsien Ch'u

Glukh, Ye. M., Chalyy, G. V. and Ettinger, Ye. L.
A SYSTEM OF IONIC EXCITATION FOR WATER-WHEEL GENERATORS (Sistema Ionnogo Vozbuzhdeniya Gidrogeneratorov). 18 Apr 57 [16]p. 1 ref. (foreign text included) M-V. Trans. no. 2304; M. 51.
Order from LC or SLA mi$2.40, ph$3.30 59-18674

Trans. of Elektrosila (USSR) 1956, no. 14, p. 35-40.

Contents: Lay-out and chief function of a system of ionic excitation, Lay-out for grid control by rectifiers, and The main lay-out of the system of ionic excitation of the Kuibyshev water-wheel generators.

Gorod'yetskiy, S. A.
METHODS FOR CALCULATING THE MOISTURE IN TRANSFORMERS (O Sposobakh Otsenki Uvlazhennosti Transformatorov). 15 Mar 56 [12]p. (figs. tables, refs. omitted) M-V. Trans. no. 2186; M. 29.
Order from LC or SLA mi$2.40, ph$3.30 59-18652

Trans. of Elektrichestvo (USSR) 1955, no. 9, p. 54-59.

Grossmann, Lee.
INSULATING TAPE OF WATER-PROOF PAPER. [1959] [3]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17858

Trans. of German patent 372925, cl. 21c, gr. 2 (G 50279 VIII/21c) pat. since 10 Feb 20.

According to the invention under consideration, insulating tape is prepared from crepe paper or smooth textured paper coated, on one or both sides, with an insulating solution of pure rubber or a mixture of rubber and French resin or some other rubber-mixture or compound or the like; this solution is of low viscosity, remains permanently sticky and acts as an insulation. If the paper is treated on both sides with the rubber solution, an intermediate strip of paper or the like is placed between adhering surfaces of the insulation tape to be rolled up, this intermediate strip being prepared in such a way that the adhesive substance cannot stick to it, whereby an easy un-rolling of the insulant-strip is made possible. (Extracted from the report)

Ipatov, P. M. and Khutoretskiy, G. M.
PARAMETERS OF WATER-WHEEL GENERATORS (Parametri Gidrogeneratorov). 11 Feb 57 [9]p. M-V. Trans. no. 2294; M. 11.
Order from LC or SLA mi$1.80, ph$1.80 59-18634

Trans. of Elektrosila (USSR) 1956, no. 14, p. 24-27.

An examination is made of the degree of influence of the chief parameters of a water-wheel generator on its principal dimensions. Certain correlations are given alleviating the detection of an optimum type of water-wheel generator for the Kuibyshev hydroelectric power station.

Ivanov, N. P., Yeremeyev, A. S. and others.
LARGE HYDROGENERATORS (Moshchnyye Gidrogeneratory) 28 Nov 56 [18]p. 5 refs. (foreign text included) M-V. Trans. no. 2285; M. 47.
Order from LC or SLA mi$2.40, ph$3.30 59-18670

Trans. of Elektrosila (USSR) 1956, no. 14, p. 5-11.

Parameters of hydrogenerators and fundamental technical conditions are reviewed, and construction of hydrogenerators is discussed.

Kalitvyanskiy, V. I. and Koval'skaya, A. V.
THE LIFE OF NEW TYPES OF INSULATION FOR ELECTRICAL MACHINES (Prodol'zhitelnosti Sluzhby Novykh Yidov Izolyatsii Electricheskikh Mashin). 6 Dec 55 [9]p. (7 figs. 2 tables 11 refs. omitted) M-V. Trans. no. 2158; M. 30.
Order from LC or SLA mi$1.80, ph$1.80 59-18653

Trans. of Elektrichestvo (USSR) 1955, no. 10, p. 40-44.

Results are given of an investigation with a view to determining the life of organic silicone and cellulose triacetate insulation in electrical machines. The insulation of the motors under test is exposed to the action of high temperatures, high moisture content, electrical field and mechanical stresses. The basic criterion determining the life of the insulation was taken as the breakdown of the motor, under operational conditions, due to a fault in the insulation. It is established that the life of organic silicone and film insulation is linked with a given temperature equation. (Metropolitan-Vickers abstract)

Kaplan, M. Ya.
BEARINGS OF WATER-WHEEL GENERATORS (Podpyatniki Gidrogeneratorov). 13 May 57 [10]p. (8 figs 1 table omitted) M-V. Trans. no. 2295; M. 16.
Order from LC or SLA mi$1.80, ph$1.80 59-18639

Trans. of Elektrosila (USSR) 1956, no. 14, p. 27-32.

An examination of different types of bearing construction is given. Special reference is made to the type used in the bearings of water-wheel generators for the Kuibyshev hydroelectric power station.

Khomyakov, M. V.
TEST DATA IN CONNECTION WITH THE ESTIMATION OF MOISTURE IN TRANSFORMERS (Opytniye Danniye po Otsenke Vlazhnosti Transformatorov). 15 Mar 56 [10]p. (6 figs. omitted) 2 refs. M-V. Trans. no. 2190; M. 27.
Order from LC or SLA mi$1.80, ph$1.80 59-18650

Trans. of Elektrichestvo (USSR) 1955, no. 10, p. 24-28.

Generalized data are given which were obtained as a result of the perennial testing of (1) transformers in service (2) new transformers which have been delivered to the sites of erection, and (3) transformers in various stages of manufacture at the factory.

Krömer, Herbert.
CONTRIBUTION TO THE THEORY OF THE GERMANIUM RECTIFIER AND OF THE TRANSISTOR (Zur Theorie des Germaniumgleichrichters und des Transistors). [1959] [15]p. 20 refs. No. 236; AD-135 482.
Order from SLA mi$2.40, ph$3.30 59-17941

Trans. of Zeitschrift für Physik (West Germany) 1953, v. 134, no. 4, p. 435-450.

In the case of the high field strengths prevailing in the boundary layers of semiconductor-metal contacts the transport of electrons and deficit electrons (holes) is not governed by the normal mobilities, which apply when the potential drop along a mean free path is small in relation to the thermal energy kT. In the stronger fields there is a strong probability that the charge carriers will reach the interior of the band; in the limit case of very strong fields a particle oscillates back and forth in the band several times, between two collisions, and so progresses more slowly ("stagnation effect"). Mobility then decreases so that the density of the particles rises in proportion to the field strength and the current density. The constants of proportionality ("stagnation constants") for holes are estimated at 2×10^8 watt^{-1}; it should be considerably smaller for the electrons. The density of the blocked particles can reach the same order of magnitude as that of the impurity centres. The boundary layer potential then deviates considerably from the simple Schottky parabola form. Characteristic curves of Ge-transistors and diodes are calculated in accordance with this change in potential. If the parameters are suitably chosen high values are obtained for the current amplification factor in the case of transistors while in the case of diodes a displacement of the barrier characteristics has been observed. (Author)

Kronstein.
IMPROVEMENTS IN PROCESSES FOR THE MANUFACTURE OF INSULATING MATERIALS FOR ELECTRICITY. [1959] [4]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17857

Trans. of French patent 656,582, gr. 12, cl. 6, appl. 27 June 28, issued 2 Jan 29, pub. 10 May 29 (pat. appl. filed in Germany 2 July 27) by Elektra-Lack-Werke G. m. b. H., Germany.

The improvements consist mainly in coating the fiberless cellulose products, for example, of the "cellophane", "transparit" or "gaudophil" type or similar materials with an insulating substance, like a rubber solution, a solution of synthetic resin, an insulating varnish (oil varnishes like linoxyn, zaponite, nitrocellulose, or acetylcellulose), an insulating and adhesive varnish (synthetic resins) etc., and subsequent drying of the coated products.

Kronstein.
PROCEDURE FOR MANUFACTURING ELECTRIC INSULATING SUBSTANCES. 28 May 54 [4]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17855

Trans. of German patent application E. 35899, cl. 21c, gr. 2, filed 2 July 27, displayed 7 June 28, objections

accepted until 7 Aug 28, by Electra-Lack-Werke G. m. b. H.

A procedure is given for manufacturing electric insulating substances in which fiberless cellulose products are coated with an insulating matter and dried; the insulating matter may be a rubber solution, or an artificial-resin solution (oil varnishes like Linoxyn or Zapon, or like nitro- or acetylcellulose), or an insulating and adhesive varnish (artificial resins), or similar substances.

Kuchinskiy, G. S. and Litvinova, E. L.
DIELECTRIC CHARACTERISTICS OF PAPER-OIL CONDENSER INSULATION AT GAUGE OIL PRESSURES (Elektricheskiye Kharakteristiki Bumazhno-Maslyanoy Kondensatornoy Izolyatsii pri Izbytochnom Davlenii Masla) tr. by J. Baranowski. Sep 58 [10]p. 5 refs. Library Trans. no. 763; M. 146.
Order from LC or SLA mi$1. 80, ph$1. 80 59-18756

Trans. of *Elektrichestvo (USSR) 1958, no. 1, p. 64-67.

The present work considers how to ensure the satisfactory operation of the condensers when ionization characteristics of the insulation have to be taken into account. Experiments showed that with the application of the gauge oil pressure the electric shock resistance of insulation slightly increases (by 20 to 25% when oil pressure attains 7 atmospheres). The satisfactory operation of the condenser insulation designed from the point of view of its thermal characteristics may be protected against the effect of the ionization characteristics, by increasing the gauge oil pressures to the following values: for working voltage stresses 16 Kv/mm and for insulation 80 - 84μ thick, not less than 4 atmospheres; for working voltage stresses 18 Kv/mm, and insulation 60μ thick, not less than 3 atmospheres. The adoption of the increased gauge oil pressure makes the reduction in the dielectric thickness to 50 - 60μ (5 to 6 sheets of paper, 10 and 12μ thick) appropriate.

Kulakovskiy, V. B.
PRESENT-DAY METHODS OF CHECKING THE MOISTURE IN INSULATION (Sovremennyye Metody Kontrolya Vlazhnosti Izolyatsii). 15 Mar 56 [13]p. (7 refs. 1 table omitted) M-V. Trans. no. 2189; M. 28.
Order from LC or SLA mi$2. 40, ph$3. 30 59-18651

Trans. of Elektrichestvo (USSR) 1955, no. 10, p. 18-23.

Kuzovkov, N. T.
A SINGLE-AXLE ELECTRIC GYROSTABILIZER WITH THE ROTOR-CASE AXIS AT AN OBLIQUE ANGLE, tr. by R. P. Illwitzer. 16 July 59 [9]p. 4 refs. TG 230-T86.
Order from OTS $0. 50 59-21129

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1958, no. 11, p. 70ff.

The author examines the motion and stability of a gyroscopic stabilizer whose rotor axis is at an oblique angle to the axis of the outer ring. (APL summary)

Lebedev, S. V.
VIOLATION OF THE BOGUSLAVSKY-LANGMUIR LAW WHILE HEATING A TUNGSTEN CATHODE BY A HIGH-SURGE PULSE (Narusheniye Zakona Boguslavskovo-Lengmyura pri Nagrevanii Vol'framovovo Katoda Vakuumnoy Lampy Impul'som Toka Bol'shoy Plotnosti) tr. by Marcel I. Weinreich. 29 June 59, 28p. 2 refs.
Order from LC or SLA mi$2. 70, ph$4. 80 SCL-T-257

Trans. of Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1954, v. 27, no. 4(10) p. 487-500.

During the heating of a tungsten cathode in a tube by a high-surge current pulse, the anodic current exceeds by many times the usual strength defined by the law of Boguslavsky-Langmuir. The violation of this law is caused by a change in the state (constitution) of the tungsten under the action of a high-surge current, so that it is not connected with a neutralization of the spatial charge by the ions. (Author)

Lyuter, R. A. and Mozalevskiy, A. V.
AN ELECTRICAL MACHINE EXCITATION SYSTEM FOR WATER-WHEEL GENERATORS (Elektromashinnaya Sistema Vozbuzhdeniya Gidrogeneratorov) 11 Apr 57 [9]p. M-V. Trans. no. 2303; M. 10.
Order from LC or SLA mi$1. 80, ph$1. 80 59-18633

Trans. of Elektrosila (USSR) 1956, no. 14, p. 33-35.

Topics discussed include (1) electrical machines for quick-response excitation systems, (2) the drive of a double-machine exciter, and (3) the system of excitation for the water-wheel generators of the Kuibyshev hydroelectric power station.

Nienhold, Johannes.
AMPLIFIER ARRANGEMENT FOR WEAK ALTERNATING CURRENTS, E. G., TELEPHONE CURRENTS, tr. by PCC. 30 June 59, 4p. (2 figs. omitted).
Order from LC or SLA mi$1. 80 59-18289

Trans. of German patent 307,153, Class 21a, Group 45; patented from 25 May 16, pub. 29 Oct 19.

The amplifier arrangement is characterized in that the carrier of the amplification effect consists of the dispersed particles (dispersed phase) of a colloid provided in a cell which comprizes electrodes and whose amplifier current is electrostatically controlled in a conventional manner.

Poganski, Siegfried.
THE BLOCKING MECHANISM OF SELENIUM RECTIFIERS (Der Sperrmechanismus von Selengleichrichtern). [1959] [13]p. 26 refs. No. 237.
Order from SLA mi$2. 40, ph$3. 30 59-17947

Trans. of Zeitschrift für Physik (West Germany) 1953, v. 134, no. 4, p. 469-482.

On rectifiers free of intermediate layers there was investigated for five different electrode metals the dependence of the barrier potential and the zero resist-

ance of the blocking layer on the work of exit of these metals. The determined course of the blocking layer properties with the work of exit corresponds to that required by the boundary layer theory. In the case of rectifiers with an intermediate layer of cadmium selenide the influence of the same metals on the blocking layer properties was investigated. These are practically independent of the type of electrode metal. In this case the blocking effect is located at the boundary between cadmium selenide and selenium. Since cadmium selenide under these conditions is an excess semiconductor, we are dealing here with a blocking effect at the boundary between an excess and a defect semiconductor. (Author) (Presented at the convention of the Northwest German Physical Society in Essen, April 27, 1952.)

Rezino, M. G.
THE PECULIARITIES OF THE ELECTROMAGNETIC PHENOMENA OCCURRING IN A MOTOR WITH A SPHERICAL STATOR UNIT (Ossobennosti Elektromagnitnykh Yavlenii v Dvigatele s Dugovym Statorom). 23 Apr 56 [7]p. (9 figs. 5 refs. omitted) M-V. Trans. no. 2207; M. 25.
Order from LC or SLA mi$1.80, ph$1.80 59-18648

Trans. of Elektrichestvo (USSR) 1951, no. 6, p. 25-29.

Test curves of the space and time distribution of induction in an air-gap and fluxes in the yoke of a machine when the motor has a spherical stator unit are given. Oscillograms are given characterizing the e.m.f. in the core of the rotor from the moment of connection of the motor to a network until attainment of the no-load condition when the rotor winding is short-circuited. (Metropolitan-Vickers abstract)

(Engineering--Electrical)

Romanovskiy, V. B.
CONCERNING A NUMERICAL METHOD FOR CALCULATING CERTAIN ELECTRIC CIRCUITS (Po Povodu Chislennogo Metoda Rascheta Nekotorykh Elektricheskikh Tsepey). 11 Apr 58 [4]p. (6 equations, 1 table omitted) 1 ref. M-V. Trans. no. 2440; M. 35.
Order from LC or SLA mi$1.80, ph$1.80 59-18658

Trans. *Elektrichestvo (USSR) 1957, no. 8, p. 47-48.

The method proposed by V. M. Bondarenko and G. E. Pukhov (Elektrochestvo 1957: 44-46; or translation 59-18659) is generalized to extend the class of circuits for which the current may be calculated. Inasmuch as several of the important equations are omitted from the present translation, the reader will probably need access to a copy of the original article.

Rozovskiy, Yu. A., Marchenko, Ye. A. and Andreyuk, V. A.
SELF-OSCILLATION AND SELF-EXCITATION OF COMPENSATING SYNCHRONOUS CAPACITORS (O Samoraskachivanii i Samovozbuzhdenii Kompensirovannykh Sinkhronnykh Kompensatorov). 16 July 56 [17]p. 4 refs. (foreign text included) M-V. Trans. no. 2228; M. 24.
Order from LC or SLA mi$2.40, ph$3.30 59-18647

Trans. of Elektrichestvo (USSR) 1955, no. 5, p. 59-63.

The determination of the limiting permissible (critical) values of the degree of compensation of the reactance of synchronous capacitors is described according to the conditions of the development of self-excitation and self-oscillation phenomena. Results are given of the investigation of the self-oscillation of generators in the presence of direct compensation.

Shtrafun, Ya. N.
AUTOMATIC CONTROL OF THE EXCITATION OF WATER-WHEEL GENERATORS (Avtomatika Regulirovaniya Vozbuzhdeniya Gidrogeneratorov). 15 Apr 57 [14]p. 1 ref. (foreign text included) M-V. Trans. no. 2305; M. 9.
Order from LC or SLA mi$2.40, ph$3.30 59-18632

Trans. of Elektrosila (USSR) 1956, no. 14, p. 40-44.

Timofeyev, S. S.
INSTRUMENTS FOR MEASURING LARGE DIAMETERS AND LENGTHS (Instrumenty dlya Izmereniya Bol'shikh Diametrov i Dlin). 6 May 57, [7]p. (10 figs. omitted) M-V. Trans. no. 2306; M. 8.
Order from LC or SLA mi$1.80, ph$1.80 59-18631

Trans. of Elektrosila (USSR) 1956, no. 14, p. 98-102.

Venikov, V. A. and Litkens, I. V.
THE INFLUENCE OF EXCITATION REGULATION ON THE TRANSMITTING CAPACITY OF LONG TRANSMISSION LINES (O Vliyanii Regulirovaniya Vozbuzhdeniya na Propusknuyu Sposobnost' Dal'nykh Elektroperedach). 7 Nov 56 [19]p. (equations, 1 table, 17 figs., 2 appendices, 2 refs. omitted) M-V. Trans. no. 2268; M. 20.
Order from LC or SLA mi$2.40, ph$3.30 59-18643

Trans. of Elektrichestvo (USSR) 1955, no. 11, p. 15-26.

Modern regulators of excitation responding to deviations of the parameters of operation and of their derivatives may considerably improve the transmitting capacity and reliability of long-distance transmission lines. The dynamic stability can be improved by forced excitation of a relatively high ceiling, to be controlled with advantage by the second derivative. The damping of oscillations at strong surges in the system requires the excitation regulator to be controlled in such a way that the field current has the maximum variation at the zero-passage of the speed. (Metropolitan-Vickers abstract)

Vizun, Yu. I.
EQUIPMENT FOR INVESTIGATION OF THE PROPERTIES OF MAGNETIC CORES. [1959] [14]p. 4 refs. M. 163.
Order from LC or SLA mi$2.40, ph$3.30 59-18770

Trans. of unidentified mono. pub. by Inst. of Precision Mechanics and Computing Technique, A[cademy] of S[ciences] USSR [Moscow].

The method of measurement and of the equipment used at the present time in the Laboratory of Magnetic Elements of the Institute of Precision Mechanics and Computing Technique Academy of Sciences USSR (ITMiVT) are described.

Yeremeyev, A. S.
AN ANALYSIS OF THE POSSIBILITIES OF INCREASING THE RATINGS OF WATER-WHEEL GENERATORS (Analiz Vozmozhnostey Povysheniya Moshchnostey Gidrogeneratorov). 7 Feb 57 [21]p. (foreign text included) M-V. Trans. no. 2292; M. 18.
Order from LC or SLA mi$2.40, ph$4.80 59-18641

Trans. of Elektrosila (USSR) 1956, no. 14, p. 12-18.

Reference is made to the stator, bearings, system of excitation, rotor, pole cores, and numerous other components. (Metropolitan-Vickers abstract)

Yeremeyev, A. S.
THE MANUFACTURE OF WATER-WHEEL GENERATORS (Konstruktsiya Gidrogeneratorov). 2 May 57 [11]p. (7 figs. omitted) 2 refs. M-V. Trans. no. 2293; M. 17.
Order from LC or SLA mi$2.40, ph$3.30 59-18640

Trans. of Elektrosila (USSR) 1956, no. 14, p. 19-24.

Water-wheel generators for the Kuibyshev hydroelectric power station are described. In these generators the bearing rests on the turbine top cover. Although requirements in regard to reactances, flywheel torque, load on the bearing, ceiling, and rate of increase in excitation are very severe, specific gravity per unit of power on these machines is considerably less than on previously delivered quiet-running water-wheel generators.

Zeml'yanoy, M. I. and Minayev, A. A.
WAYS OF IMPROVING THE VENTILATION OF LARGE WATER-WHEEL GENERATORS (Puti Uluchsheniya Ventilatsii Moshchnykh Gidrogeneratorov) 24 May 57 [16]p. (20 figs. 1 table omitted) 1 ref. M-V. Trans. no. 2298; M. 13.
Order from LC or SLA mi$2.40, ph$3.30 59-18636

Trans. of Elektrosila (USSR) 1956, no. 14, p. 71-82.

Topics discussed include (1) existing systems of ventilation for large water-wheel generators, (2) experimental investigation of the ventilation of generators in operation, (3) analysis of the results of investigation and fundamental ways of improving the ventilation of present-day large water-wheel generators, (4) choice of the construction for the pressure components, and (5) the hydrodynamic resistance of an air-duct.

Zhabotinskiy, M. E., Levin, M. L., and Rytov, S. M.
THE TELEGRAPH EQUATION FOR GENERALIZED LINES WITH LOW LOSSES. [1959] 28p.
Order from ATS $28.90 ATS-81L33R

Trans. of Zhur[nal] Tekh[nicheskoy] Fiz[iki] (USSR) 1950, v. 20, no. 3, p. 258-281.

Zingerman, Ya. P.
THE THERMAL CONDUCTIVITY OF AN OXIDE CATHODE (Pro Teploprovidnist' Oksiydnoho Katoda). July 59 [7]p. 7 refs. R. T. S. no. 1030.
Order from LC or SLA mi$1.80, ph$1.80 59-18509

Trans. of Ukrayins'kyy Fizychnyy Zhurnal (USSR) 1956, v. 1, no. 3, p. 308-311.

By using a thermocouple probe the coefficient of thermal conductivity was found to be approximately 10^{-5} cal·cm^{-1}·sec^{-1}. in the temperature range 200-700°C. (Author)

Mechanical Engineering

ENERGETIK (USSR) 1959, NO. 7, P. 1-[38] (Power Engineer). [1959] [20]p. SOV-91-59-7-(1-21)/21.
Order from OTS $0.60, $3.50/6 mo. PB 141 084T-17
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

TEPLOENERGETIKA (USSR) 1959 [V. 6] NO. 6, P. 3-96 (Heat Power Engineering). [1959] 1v. SOV-96-59-6-)1-22)/22.
Order from OTS $0.70, $4.00/6 mo. PB 141 089T-16
Foreign $0.95, $5.50/6 mo.

Consists of abstracts in English.

Constantinesco, Gogu and Haddon, Walter.
MEANS FOR CHECKING THE EFFECT OF INERTIA IN FLUID COLUMNS. 22 July 59, 16p. (21 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-18792

Trans. of Dutch patent 4,270, cl. 47 h, gr. 18, pat. 17 Aug 19, appl. 26 Apr 15, pub. 1 Dec 19 (Priority: Great Britain, 20 May 14).

The device is characterized by a solid body which divides the fluid column and thereby follows the movements of the fluid column. This body has such dimensions and is in both directions elastically supported in such a way that the inertia effect of the fluid columns at the occurring oscillating frequency is to a considerable degree or completely overcome. The indicated means are used for overcoming the inertia effect, either in connection or not in connection with auxiliary inertia masses in such a manner that the oscillation period equals the oscillation period of a heavy body moved by the oscillations, whereby small quantities of oscillation energy can be accumulated for generating great forces.

Aleksandrov, A. B.
THE EXPERIMENT OF RUNNING A GAS TURBINE POWER STATION WORKING ON NATURAL GAS IN BUCHAREST (Opyt Eksploatatsii Gasoturbinnoy Electrostantsii na Prirodnom Gaze v Buhareste) tr. by Mrs. Wareing. 4 Sep 57 [9]p. (2 figs. omitted) M-V. Trans. no. 2355; M. 59.
Order from LC or SLA mi$1.80, ph$1.80 59-18682

Trans. of Energeticheskiy Byulleten' (USSR) 1957, no. 7, p. 26-31.

Topics discussed include (1) a general description of the gas turbine installation; (2) governing and safety mechanisms; and (3) breakdowns and faults in the gas turbine installation.

Kobrinskiy, A. Ye.
ALL-UNION CONFERENCE ON BASIC PROBLEMS OF THE THEORY OF MACHINES AND MECHANISMS (NO. 2). [1959] 4p. 1 ref. M. 165.
Order from LC or SLA mi$1.80, ph$1.80 59-18772

Trans. of A[kademiya] N[auk] SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1958, no. 6, p. 158-160.

This conference held March 24th. to 26th., 1958 was a follow up of one held in June 1954. Papers read by Academicians A. A. Blagonravov, I. I. Artobolevsky and I. G. Bruevich are summarized. Topics are noted of other papers devoted to analysis and synthesis of mechanisms, dynamics of machines, theory of precision in mechanical engineering and instrument making, the theory of automatic machines, and the theory of transmissions in machines.

Neyman, Z. B.
VERTICAL ELECTRIC MOTORS FOR LARGE PUMPS (Vertikal'nyye Elektrodvigateli dlya Moshchnykh Nasosov). 1 Apr 55 [20]p. M-V. Trans. no. 2050, M. 38.
Order from LC or SLA mi$2.40, ph$3.30 59-18661

Trans. of Elektrichestvo (USSR) 1954, no. 10, p. 55-62.

Soviet industry is now using a series of new types of pumping units with powerful vertical pumps of the impeller or centrifugal type for irrigation installations, pumping stations and thermal power stations. The difficulties encountered in the selection of the type of motor for connection to the 10,000 v supply are discussed. The author also investigates the problems of starting the large synchronous motors for driving these pumps; the construction of a new series of vertical asynchronous and synchronous motors is also described. (M-V abstract)

GUIDED MISSILE INFORMATION. 23 July 59 [3]p. (3 illus. omitted) 9 refs. AF 1255956.
Order from LC or SLA mi$1.80, ph$1.80 59-19725

Trans. of excerpts from open USSR. Soviet Bloc and other foreign sources, 1959.

RESULTS OF OBSERVATIONS OF SOVIET ARTIFICIAL EARTH SATELLITES NO. 1, SPUTNIK 1958 (ROCKET) (16 MAY-30 JUNE 58). 17 Apr 59, 23p. JPRS: 658-D.
Order from OTS $0.75 59-11510

Consists of selected translations from Soviet-bloc International Geophysical Year literature.

The purpose of the present work consisted in determining the orbit of the carrier rocket of the third Soviet artificial earth satellite, which was launched on 15 May 1958. The data for the computations consisted of reports sent by Soviet and foreign optical-observation stations to the Astronomical Council of the Academy of Sciences USSR. All the necessary computations were made in Moscow on a BESM high-speed computer. The present bulletin contains the observed coordinates related to the period 1950.0, the factors for universal time, the sidereal values, and the differences between the observed and the computed coordinates of the rocket. If these differences exceed 10^{o} in absolute value, they are not cited, but there is merely an indication in the text that the observations were rough. In instances when it is possible to ascertain the reason for the error, it is indicated in the comments. Some of the grievously erroneous observations possibly pertain to the satellite, rather than to the rocket. The observations are usually given with an indication of the code number and name of the station. (Extracted from the report)

Georgiyev, D.
IN THE NEW LABORATORY (OF THE TASHKENT ASTRONOMICAL OBSERVATORY) (V novoy Laboratorii (Tashkentskoy Astronomicheskoy Observatorii)). 18 Feb 59 [2]p. AF 1255526.
Order from LC or SLA mi$1.80, ph$1.80 59-16318

Trans. from Pravda Vostoka (USSR) 1959, no. 2, p. 3, c. 1.

When Tashkent is notified from the "Gosmos" center about flights of the artificial earth satellite over the capital of Uzbekistan and nearby rayons, continuous observation of the sky is begun in the Tashkent Astronomical Observatory. Observations of artificial satellites began in Tashkent on 4 October 1957, from the first minutes of the launching of the first earth satellite. One of the enthusiasts of these observations was the candidate in physico-mathematical sciences Abdusalyam Latypov. Now, he was put in charge of the first laboratory of photographic astronometry and

artificial earth satellites established at the observatory of the Academy of Sciences of the Uzbekskaya SSR. Besides him, scientific work is carried on by the junior scientific workers A. Kadyrov and A. Rakhimov and by laboratory assistants. The laboratory has made many photographs of artificial earth satellites. Thus, the carrier-rocket of the third satellite was fixed in its flight over Tashkent before its entry into the dense layers of the atmosphere. Useful information, especially for determining the coordinates of the flight, will be derived from photographs of the artificial satellite made on the morning of 21 December. (More than half of the translation is included in the above extract.)

Sanitation and Safety Engineering

Korablev, M., Lebedeva, Yu. and others.
LOCAL ANTIAIRCRAFT DEFENSE IN RURAL LOCALITIES. 11 Sep 59, 156p. 4 refs. JPRS: L-1852-D.
Order from OTS $3.00 59-11779

Trans. of mono. MPVO v Sel'skoy Mestnosti, Moscow, 1959, chap. I-IV, p. 1-200.

The present book deals briefly with a complexity of problems the solution of which is required for the organization of local antiaircraft defense in the kolkhozes, sovkhozes, machine-tractor stations, radio-telegraph stations, as well as various enterprises and institutions located in the rural areas. The book contains information on the methods of invasion and attack available to the armies of the imperialist states; it tells of the infectious diseases of animals which may be caused by infective agents deliberately spread by the enemy; it describes the agricultural pests and the methods of fighting them; it outlines the principles of organizing anti-bacterialogical defense; it recommends a number of fire-fighting, sanitation-hygiene, and veterinary measures; it contains advice on the protection of foodstuffs, forage and fodder for animals, and water against contamination by radioactive and poisonous substances as well as disease-producing microbes and toxins; it lists the rules to be observed by the population under the direction of the local antiaircraft defense. The book is designed for a wide circle of readers living in the rural areas and may be used in the studies at the antiaircraft defense circles.

Manfredi, Aldo.
SUBSTANCES WITH INSECTICIDAL PROPERTIES, OBTAINED THROUGH CONDENSATION OF PHENOLS WITH ALDEHYDES AND KETONES, WITH OR WITHOUT THE SUBSEQUENT HALOGENATION OF THE CONDENSATES. [1959] [5]p. 3 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-17094

Trans. of Italian patent 429377, class 12, appl. 11 Oct 45, granted 24 Jan 48, by Societa Anonima Fabbriche Fiammiferi ed Affini, Milan.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Klingelhöffer, Hans.
METHODICAL PLANNING OF PACKAGING. [1959] 20p. (3 figs. omitted) 3 refs.
Order from SLA mi$2.40, ph$3.30 59-17823

Trans. from Verpackungsrundschau (West Germany) 1951, no. 1.

Discussion are presented on: (1) Packaging as a technical design problem; (2) foundations of an evaluation of packaging methods; and (3) the direction of development on the basis of the quality diagram.

Food

DEVICE FOR CONTROLLING THE UPPER LIQUID LEVEL IN BOTTLES AND FLASKS FOR APPLICATION IN BEVERAGE AND OTHER LIQUID-DRAWING MACHINES (Dispositif de Reglage du Viveau [Sic] Superieur du Liquide dans les Bouteilles et Flacons, Applicable aux Machines à Tirer les Boissons et Autres Liquides). [1959] [5]p.
F-TS-9442/V.
Order from LC or SLA mi$1.80, ph$1.80 59-22187

Trans. of 1st Supplement to French patent 536, 027 [gr.] XX [cl.] 4, appl. 7 Feb 22, released 19 Mar 23, pub. 18 July 23 (principal pat. taken out 26 May 21) by Jaeger-Rouot & Grilliat Co., by power of attorney: Maulvault.

The purpose of the improvement effected in the liquid level-control device designed for filling bottles and flasks, consists in removing the nozzle the moment it closes and then removing the bottle. The improvement consists of an annular capillary space in constant contact with the open air thus disposing of the normal air isolation between the center tube and the hub of the mobile piston which regulates the variation of the liquid level in bottles to be filled. (Extracted from the report)

Bramstedt, F.
SUBSTANCES RESPONSIBLE FOR TASTE AND SMELL IN FISH (Geschmacks- und Geruchsstoffe im Fischfleisch) tr. by F. W. van Klaveren. [1959] [16] p. 27 refs. Translation Series no. 235.
Order from SLA mi$2.40, ph$3.30 59-20001

Trans. of Archiv für Fischereiwissenschaft (West Germany) [1957] v. 8, p. 94-103.

The free amino acids can develop substances forming the basis for the development of compounds with special odorous and flavouring qualities. Hitherto, it has been possible to recognize in fishes such substances as piperidine, N-amino-piperidine, δ-aminovaleraldehyde, isovaleraldehyde, isovaleric acid and pyridine. When developing the typical fleshy odour

and flavour during a longer period of hanging, substances with unpleasant flavours like hydrogen sulphide, mercaptan compounds, combinations similar to piperidine in combination with free amino acids play an essential part. By an appropriate mixture the desired pleasant flavour is attained. The free amino acids, for the greatest part, have a sweet taste. Some of them have, moreover, special tastes. Investigations on ling cod reveal a constant decrease in the amino acids and development of odoriferous substances during storage. They are replaced by peptides which are split off from the proteins. (Author's summary)

Dubrova, G. B., Ravich-Scherbo, Yu. A. and Onikiyenko, A. Ya.
THE DETERMINATION OF RESIDUAL QUANTITIES OF CHLORTETRACYCLINE IN FISH. [1959] 10p. 4 refs. M. 147.
Order from LC or SLA mi$1.80, ph$1.80 59-18757

Trans. from Voprosy Pitaniya (USSR) 1958, v. 17, July/Aug.

The sensitivity of the method involving the diffusion of antibiotic in agar can be increased by lowering the number of test culture cells inoculated and by adding sulphates of copper and manganese to the agar. For the purpose of the quantitative determination of chlortetracycline in fish tissues, it is proposed that the tissue be subjected to size reduction in an EMIB tissue grinder at the same time as the antibiotic is extracted by a citrate buffer solution. The determination of chlortetracycline must be based on a standard curve plotted on semi-logarithmic graph paper. The standard curve is obtained on the basis of data provided by the analysis of samples of fish tissue which have not been subjected to antibiotic treatment and to which a known quantity of chlortetracycline is added. Standard curves of this kind must be drawn for each type of fish. (Author's conclusions)

Korringa, P.
QUALITY DETERMINATION OF MUSSELS (MYTILUS EDULIS) AND OYSTERS (Qualitatsbestimmungen an Miesmuschęln und Austern). 18 Jan 56 [7]p. Translation Series, No. 76.
Order from SLA mi$1.80, ph$1.80 59-20179

Trans. of Archiv fur Fischereiwissenschaft (West Germany) 1955, v. 6, no. 3/4, p. 189-193.

Standards for quality of mussels and oysters are determined by calculating the "condition coefficient", i.e., $\frac{\text{dry wt of flesh (g)}}{\text{shell volume (cc)}} \times 1000$.
The influence of parasites can be easily determined by this method. Oysters of ordinary quality have condition coefficients of 80 to 90.

Maltschewsky, N.
MOLD FUNGI ISOLATED FROM FRUIT JELLIES AND JAMS (Über die aus Fruchtgelees und Konfitüren Isolierten Schimmelpilze). [1959] [19]p.
Order from SLA mi$2.40, ph$3.30 59-20157

Trans. of Zeitschrift für Lebensmittel-Untersuchung und -Forschung (West Germany) 1955, v. 102 [no. 4] p. 236-[245].

Niinivaara, F. P. and Pohja, M. S.
ON THE RIPENING OF RAW SAUSAGE. II. BACTERIAL STRAINS ISOLATED FROM RAW SAUSAGE AND THEIR IMPORTANCE IN THE RIPENING PROCESS. 7 Feb 59, 5p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-20297

Partial trans. (p. 194-196) of Zeitschrift für Lebensmittel-Untersuchung und -Forschung (West Germany) 1957, v. 106, no. 3, p. 187-196.

Yakubov, M. K., [Pokorniy] and others.
[DISCUSSIONS ON SOME OF THE CHEMISTRY OF OIL AND FATS, MONO-, DI-, AND TRIGLYCERIDES, SATURATED OR UNSATURATED ETC. [AND] THE USE OF HYDROGENATED FATS IN COCOA-BUTTER SUBSTITUTES]. Rept. on Cocoa Butter Substitute: Production in USSR. [1959] 7p. 20 refs. M. 181-82.
Order from LC or SLA mi$1.80, ph$1.80 59-19158

Trans. of Masloboyno Zhirov[aya] Promyshl[ennost'] (USSR) 1958, v. 24, no. 1, p. 12-16 and no. 11, p. 17-19.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

USSR INDUSTRIAL EQUIPMENT (TRANSPORTATION, CONSTRUCTION, PRODUCTION, AND POWER MACHINERY [NO. 14, 7 OCT 59]. [1959] [30]p. 92 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-19806

Trans. of unevaluated information selected from Russian-language publications.

Contents:
500,000-kw hydroturbine for the Krasnoyarskaya Hydroelectric Power Station
Transportation equipment: automotive industry
Use of plastics
Motor-vehicle plants and models
Bicycles and motorcycles
Bearings
Construction machinery
Hoist and transport equipment
Excavators
Pumps
Road machinery
Production machinery
Machine tools
Presses and foundry machinery
Power machinery
Turbines
Generators and converters
Motors
Plant information
(See also 59-19274)

Aleksandrov, M. M.
QUANTITATIVE EVALUATION OF FRICTIONAL FORCE DURING MOVEMENT OF THE TOOL IN A DEVIATED HOLE. [1959] 8p.
Order from ATS $13.25 ATS-45L34R

Trans. of Izvest[iya] Vysshykh Ucheb[nykh] Zaved[eniy]. Neft' i Gaz (USSR) 1959, no. 4, p. 41-48.

Bron, O. B. and Obraztsov, V. A.
AUTOMATIC FIELD-QUENCHING DEVICES FOR LARGE SYNCHRONOUS MACHINES (Avtomaty Gasheniya Magnitnogo Polya dlya Krupnikh Sinkhronnykh Mashin). 12 June 57 [15]p. (9 figs. and 29 equations omitted) 1 ref. M-V. Trans. no. 2296; M. 15.
Order from LC or SLA mi$2.40, ph$3.30 59-18638

Trans. of Elektrosila (USSR) 1956, no. 14, p. 44-51.

A new automatic device, developed by "Elektrosila" is described which has a very reliable operating construction and a very short field-quenching duration. The use of this device for large synchronous machines improves the reliability of their operation.

Hünecke, Helmut.
CLEANING APPARATUS WITH LIQUID FEED, tr. by FHB. 17 June 59, 3p. (5 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18290

Trans. of German patent 542,640, Class 34 c, Group 7; patented from 19 Nov 29, pub. 27 Jan 32.

The invention relates to a cleaning apparatus with liquid feed and a collecting chamber provided between the upper and lower part of the apparatus, where-from the liquid is, by means of pressure, discharged through apertures in the brush element. The invention offers the advantage that the necessary liquid-collecting chamber is not formed by a special shape of the upper and lower parts of the apparatus, but simply by the insertion of a rubber ring which functions at the same time as seal between both parts of the apparatus. Accordingly, the collecting chamber is formed by a rubber bulge placed between the parts of the apparatus. (Extracted from the report)

Kloss, Anton.
SEWING MACHINES AND SEWING MACHINE DRIVES (Nähmaschinen und Nähantriebe). [1959] [10]p [10]p. 15 refs. No. 195.
Order from SLA mi$1.80, ph$1.80 59-17929

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1952, v. 94, no. 19, p. 595-598.

This is from a special issue on the Technical Fair in Hannover, Germany, in 1952. The article covers innovations in the design of sewing machines, attachments, and drives.

May, Alexander and Steckhan, Otto.
SAND SPRAYER FOR MOTOR VEHICLES, tr. by F. H. B. 21 Aug 59, 4p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19218

Trans. of French patent 1.010,818, gr. 10, cl. 1, appl. 5 Nov 48, patented in France from 26 Mar 52, pub. 16 June 52.

A sand sprayer for motor vehicles, operated by exhaust gases or other compressed gases, is described which is characterized in that the sand-spraying nozzles are movable as a whole, so as to permit, when the vehicle is in motion, and for example from the driver's seat, adjustment of the position of the spot to be sprayed with sand to driving conditions. Guide walls in the spraying nozzles are movable when the vehicle is in motion, by means of a common control lever.

Meiners, Karsten.
HEAT TRANSFER FROM THE UNILATERALLY HEATED HORIZONTAL SHAFT (Warmeübergang an der Einseitig Beheizten, Waagerechten Wellen). [1959] [25]p. 3 refs.
Order from SLA mi$2.70, ph$4.80 59-20149

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1957, v. 99 [no. 15] p. 667-671.

Ollendorf, Franz.
THE ANALOGY BETWEEN ELECTROMAGNETIC MACHINES AND INDUCTION MACHINES (Die Analogie Zwischen Elektromagnetischen Maschinen und Influenzmaschinen). [1946] [8]p. (4 figs. omitted) 2 refs. No. 139.
Order from SLA mi$1.80, ph$1.80 59-17954

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe A. Zentralblatt für Elektrotechnik] (Germany) 1924, v. 45 [no. 11] p. 210-213.

Timofeyev, S. S.
THE USE OF PNEUMATIC WRENCHES FOR PRESSING THE ACTIVE STEEL OF ELECTRICAL MACHINES (Primeneniye Pnevmaticheskikh Sbalchivatyeley dlya Opressovki Aktivnoy Stali Elektromashin). 1 Mar 57 [5]p. M-V. Trans. no. 2301; M. 49.
Order from LC or SLA mi$1.80, ph$1.80 59-18672

Trans. of Elektrosila (USSR) 1956, no. 14, p. 103-104.

A pneumatically operated, piston-type wrench, used for tightening nuts in order to press the active steel of a stator, is described.

Zippel, Richard.
STRAPPING AND SEALING MACHINE FOR BALES. 6 Aug 59, 13p. (13 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-19226

Trans. of German patent 950,836, cl. 81c. gr. 19, granted 6 Sep 53, pub. 18 Oct 56.

The invention proposes to construct the motor-driven tightening and sealing device for bale straps as a small, simple hand machine, which is so set up that the period between and tightening and sealing processes may be of any desired length. The invention solves the problem thus: the motor-driven sealing device for the placed and tightened strap is driven by a motor thru an engaging clutch, automatic or hand-operable, after the motor-effected tightening is automatically interrupted upon the strap tension's exceeding a set limit. The apparatus has a universal motor which can be plugged into the lighting circuit; it drives the tightening and sealing devices via a reduction gear. The tightening device has a tightening-wheel couplable to it and working on the strap to be tightened. Its distance from the opposing tightening jaw is appropriately variable. The tightening-wheel is couplable to the tightening device by means of a hand-operated dog clutch and is automatically disengaged as soon as the strap is tight enough. (Extracted from the report)

Engines and Propulsion Systems

Bazhenov, M. I., Korchemnyy, L. I. and Danilov, L. I.
REMOVAL OF FURNACE SCALE FROM THE SURFACE OF ROLLED PLATE BY THE STEAM EXPLOSION METHOD. [1959] [5]p. (3 illus. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-20085

Trans. of *Metallurg (USSR) 1958 [v. 3] no. 6, p. 27-29.

A special (middle) roll, with holes on its surface, was prepared and installed in a Lauth three-high roughing mill stand. Test rollings with such a roll showed that all scale was removed from both sides of the slab on the first few passes, without the use of birch brushes. Explosions from the vaporization in the holes are quite powerful, and completely remove the scale during the rolling of alloy metal. Splatter from flame dressing [scarfing?] and minute scabs are also removed. Such a roll, in addition to [having] a devastating effect on the scale, also thoroughly works the strata of metal [near the] surface. Seams and even fissures are rolled out completely, to a depth of 3 mm. The size, shape, and distribution of holes on the surface of the roll are determined by formulas derived through experience. (Extracted from the report) (See also 59-20084)

Bychkovakiy, A. L.
SOME CHARACTERISTICS OF MOVABLE SLOT BURNERS FOR PULVERISED COAL (Nekotoryye Kharakteristiki Povorotnoshchlevykh Pyleugol'nykh Gorelok). Aug 59 [15]p. 3 refs. R. T. S. no. 1119.
Order from LC or SLA mi$2.40, ph$3.30 59-19249

Trans. of Teploenergetika (USSR) 1959 [v. 6] no. 3, p. 45-49.

Experimentally obtained relations showing how resistance and heat losses depend on design factors and operating conditions are given for two types of movable slot burner manufactured by the Podol'sk Engineering Works.

Konakov, P. K.
ON HEAT OUTPUT IN A BOILER FURNACE, tr. by R. P. Illwitzer. 6 July 59 [17]p. 3 refs. TG 230-T78.
Order from OTS $0.50 59-21130

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1950, no. 6, p. 888ff.

The author employs similarity theory to derive new formulae for determining gas temperatures at the exit of a steam-boiler furnace from the equations defining the operating processes in a furnace. (APL summary)

Lapis, M. A. and Koshevaya, Ye. F.
REMOVAL OF FURNACE SCALE FROM SURFACE OF ROLLED SHEET BY STEAM GAS EXPLOSIVE METHOD. [1959] 2p. (2 illus. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-20084

Trans. of *Metallurg (USSR) 1958 [v. 3] no. 6, p. 29-30.

Since 1957 a new method of scale removal, developed in experiments at the Kuznetsk Metallurgical Combine, has been employed in the plate-rolling industry. This method utilizes a specially notched middle roll in a three-high roughing mill. Adaptation of this method of scale removal has proved extremely effective and economical in rolling nearly all types of steel, since it permits complete removal of furnace scale from both sides of the slab in just a few passes. (Extracted from the report) (See also 59-20085)

Pomiluyko, N. S. and Shlyakhto, P. N.
METHODS OF IMPROVING THE CHARACTERISTICS OF D. C. TRACTION MOTORS (Puti uluchsheniya Tyagovykh Dvigateley Postoyannoyo Toka). 4 Mar 58 [9]p. (6 figs. omitted) M-V. Trans. no. 2386; M. 4.
Order from LC or SLA mi$1.80, ph$1.80 59-18627

Trans. of Elektrichestvo (USSR) 1955, no. 9, p. 18-22.

An examination of the disadvantages of present-day traction motors with the authors' suggestions for eliminating them. A rise in travelling speeds and efficient use of power are the main factors concerned in the improvement of electric rolling stock. (M-V abstract)

Reynst, F. H.
THE RESONATOR AS A POSSIBILITY OF REDUCING THE CONSUMPTION OF FUEL BY TURBO-DRIVE POWER PLANTS OF AIRCRAFT (Der Resonator als Moglichkeit zur Herabsetzung des Brennstoffverbrauches bei Turbotriebwerken von Flugzeugen). [1959] [12]p. 6 refs. No. 177.
Order from SLA mi$2.40, ph$3.30 59-17933

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1952, v. 94, no. 3, p. 79-84.

Schneider, Kurt and Nitsch, Alfred.
RECENT DEVELOPMENTS IN THE CONSTRUCTION OF PISTONS FOR INTERNAL COMBUSTION ENGINES [Neue Entwicklungen im Bau von Kolben fur Verbrennungskraftmaschinen]. [1959] [20]p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-20314

Trans. of Metall (West Germany) 1956 [v. 10] no. 5/6, p. 205-211.

Machine Parts and Mechanisms

Agte, C. and Dufek, V.
EFFECT OF TANTALUM CARBIDE AND COLUMBIUM CARBIDE ADDITIONS UPON PROPERTIES OF SINTERED CARBIDES. [1959] 5600 words.
Order from HB $14.75 HB-4596

Trans. of Hutnické Listy (Czechoslovakia) 1955, v. 10, no. 6, p. 322-329.

Survey of effects of small (max. 1% and medium (10-20%) additions of TaC and CbC on technological and cutting properties of sintered carbides of the WC-Co and WC-TiC-Co systems. Effect on grain refinement; production technique for TaC and CbC. Comparison of effect produced by TaC and CbC with that of TiC. Sintered carbides containing 91.5% WC, 1CbC +TaC, 0.5 VC and 3 Co. Effect of grain size on cutting performance; are high hardness and wear resistance really more important for high cutting power than great strength and toughness? Studies of quasi-ternary system of WC-TiC-TaC(CbC)-Co. Special carbides for various types of metal working. General purpose carbides. Present trends. (HB abstract)

Dietz, H.
THE TRANSFER OF TORQUES IN UNIVERSAL JOINTS. [1959] 12p. (13 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-17833

Trans. of unidentified mono.

It is shown that during the transmission of torques by means of universal joints there arise oscillatory bending stresses in the two shafts, and that the torque is also subject to fluctuations, which may give rise to oscillations. The determination of these moments can be carried out by means of a simple method. An example illustrates the force and moment conditions during the revolution of a joint shaft. (Author's summary)

Mazzoni, Lucien.
IMPROVEMENTS IN CAGES FOR ROLLER BEARINGS OR BALL BEARINGS, tr. by J. C. Levy. 24 July 59, 9p. (14 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18780

Trans. of French patent 993,520, gr. 5, cl. 3, appl. for 23 June 49, granted 25 July 51, pub. 2 Nov 51.

The cage according to the invention consists essentially of a ring that is made of a thermoplastic and elastic material such as a superpolyamide. It has cylindrical or spherical pockets presenting at least one access opening with suitably formed edges so as to be capable of spreading apart during placing of the bearing members.

Manufacturing Equipment and Processes

*AVTOMATICHESKAYA SVARKA (USSR) 1959, VOL. 12 (Automatic Welding).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 5, p. 3-98, PB 141 125T-17
No. 6, p. 3-92, PB 141 125T-16

Consists of abstracts in English.

*BYULLETEN' IZOBRETENIY (USSR) 1959 (Bulletin on Inventions).
Order from OTS $1.90, $10.00/6 mo.
Foreign $2.15, $11.50/6 mo.

No. 1, p. 5-72, PB 141 014T-7
No. 4, p. 5-71, PB 141 014T-8

Consists of abstracts in English.

LITEYNOYE PROIZVODSTVO (USSR) 1959 (Foundry Practice).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 4, p. 1-48, PB 141 130T-10
No. 6, p. 1-48, PB 141 130T-11

Consists of abstracts in English.

MACHINE FOR DIECASTING BRASS (TECHNICAL REVIEW). [1959] 2p. (1 fig. omitted).
Order from SLA mi$1.80, ph$1.80 59-20223

Trans. of Giesserei (Germany) 1931 [v. 18, Neue Folge, v. 4, no. 7] p. 147-148.

MASHINOSTROITEL' (USSR) 1959, NO. 5, P. 1-48 (Machine Builder). [1959] 1v. SOV-117-59-5-(1-30)/30.
Order from OTS $0.50, $3.00/6 mo. PB 141 116T-14
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS. NO. 2. 17 Aug 59, 131p. 4 refs. JPRS: 1839-N.
Order from OTS $2.75 59-13781

Trans. of selected articles from 6 Russian periodicals.

Contents:
Technical progress, the most important condition for fulfillment of the seven-year plan, by M. Lesechko
Specialization of production of common units and parts of machines, by N. A. Orlov
Some problems in the development of the chemical industry of Kazakhstan, by K. T. Akhmetov
The raw material base and development of the chemical industry of Eastern Siberia, unsigned article
Tasks in the development of the gas industry, by Yu. Bokserman, V. Kalamkarov, and A. Kortunov
Anticipated gas reserves of the USSR, by V. G. Vasil'yev and N. D. Yelin
Principal tasks of ferrous metallurgy in 1959-1965, by V. Khlebnikov
Kazakhstan, a huge iron ore and fuel base for ferrous metallurgy in the USSR, by I. S. Shapiro
The ferrous metallurgical iron ore base of East Siberia, by L. M. Feygin
(See also 59-13674)

*SVAROCHNOYE PROIZVODSTVO (USSR) 1959 (Welding Practices).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 5, p. 1-48, PB 141 138T-17
No. 7, p. 1-48, PB 141 138T-18

Consists of abstracts in English.

USSR ELECTRONIC AND PRECISION EQUIPMENT [NO. 14, 13 OCT 59]. [1959] [39]p. 101 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-19821

Trans. of unevaluated information selected from Russian-language publications.

Items of special interest include the status of automation in USSR, production of industrial equipment at the L'vov Polytechnic Institute, shortages and deficiencies, new plants, and personalities. Local production and organization is discussed for the RSFSR and the Ukrainian, Belorussian, Lithuanian, Latvian, Estonian, Azerbaidzhan, Armenian, Tadzhik, and Kirgiz SSR's. Goals and achievements are presented for electronic equipment (tubes, components, television, radios and combination sets, telephone equipment, tape recorders), computers, instruments (including industrial controls, electrical and electronic instruments, geophysical equipment, and instrument repair), precision equipment (cameras and lenses, scales, hearing aids, and theater sound equipment), and electrical products (rotating machinery, switches and other line apparatus, mercury rectifiers, power capacitors, wire and cable, batteries, and insulation). (See also 59-19189, 59-19240)

USSR MATERIALS AND MATERIALS PROCESSING EQUIPMENT, [NO. 13, 21 SEP 59]. [1959] [60]p. 136 refs.
Order from LC or SLA mi$3.60, ph$9.30 59-19685

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Items of special interest (pipelines)
Chemical industry
  Regional roundups (USSR, RSFSR, Estonian SSR, Ukrainian SSR, Armenian SSR, and Kirgiz SSR)
  Petrochemicals
  Rubber and rubber products
  Chemical fibers, plastics
  Other chemicals
Chemical machinery
Petroleum and gas industries
  Reserves and deposits
  Drilling operations
  Transport and storage
  New construction
Solid fuels
  Production and technology (Coal, peat and shale)
  Construction and expansion
  Reserves
Ferrous metallurgy
  Ore
  Iron, steel, and coke (production and technology, and construction and expansion)
Nonferrous metallurgy
  Regional roundups (USSR, Azerbaydzhan, Armenia, and Yakutiya)
  Ore
  Industrial processing
Metallurgical machinery

Borgy, Pierre.
SAFETY LOCK FOR COAXIAL-ELEMENT ASSEMBLIES, tr. by PCC. 23 June 59, 4p. (7 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18286

Trans. of French patent 917, 287, Group 3, Class 3; application 9 July 45, granted 9 Sep 46, pub. 31 Dec 46.

The object of the invention is a safety lock which prevents all air leaks. For this purpose, the two elements to be fastened are held together by a third coaxial member which is longitudinally movable on one thereof and engages the walls of the other. At the end of the movement said member is blocked against rotation relatively to the element which carries it by an opposing force. (Extracted from the report)

Goncharevskiy, M. S. and others.
MULTIPLE COLD DRAWING OF TUBES FACILITATED BY PHOSPHATE COATING. [1959] 5700 words
Order from HB $12.80 HB-4642

Trans. of Stal' (USSR) 1957, v. 17, no. 3, p. 243-253.

Advantages expected of the use of phosphate coating in cold shaping operations; importance of most careful

selection of phosphate coating as well as lubricant to combine with it. Authors' laboratory experiments on zinc phosphate coating; particulars on preparation of phosphating baths; best bath composition. Industrial-scale trials on multiple drawing of phosphated tubes; use of zinc phosphate coating in routine operations. Changes in mechanical properties and microstructure in multiple cold drawing of tubes. Changes of phosphating bath. Methods of regenerating phosphat'g baths: Use of two vs. four solutions. Soap treatment ('lubrication') of phosphate coatings; consumption of soap solution; change in properties of solution while in actual service and in storage. Numerical data on increase in plant output through heavier reductions; decrease in production cost, in amount of rejects, tool consumption, etc. Other advantages; better working conditions in shop; better outward appearance of tubes; savings on fuel, metal. (HB abstract)

Hempel, M. and Moller, H.
THE EFFECT OF WELDING DEFECTS ON TENSILE ENDURANCE LIMIT IN ST 37 STEEL SPECIMENS. [1959] 16p.
Order from ATS $23.50 ATS-01L34G

Trans. of Arch[iv für das] Eisenhuttenw[esen] (West Germany) 1949, v. 20, no. 11/12, p. 375-383.

Jacquet, [M]. P.
THE ELECTROLYTIC POLISHING OF CERTAIN METALS AND ITS APPLICATIONS. [1959] 6p. (2 figs. omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 59-20251

Trans. of Société Francaise des Électriciens. Bulletin, 1936 [ser. 5, v. 6, no. 65] p. 547-554.

Levin, M. M. and Krapukhin, V. M.
CENTRIFUGAL CASTING OF DOUBLE-FLANGE CAST-IRON PIPE. [1959] 2800 words.
Order from HB $6.35 HB-4272

Trans. of Liteynoye Proizvo[ds]tvo (USSR) 1957, no. 6, p. 1-4.

Report on a new process of making sand molds for, and centrifugal casting of, water pipe and condenser tubes (10 ft. long and 4 in ID) for which a number of design and technical advantages are claimed. Technology of screw-ram molding: data on machine used and its operation; spinning speeds; hourly output. Centrifugal casting machine; design and operating details; slope; hourly output. Molding sand mixture: effect of its moisture content on surface condition of mold; best additives for prevention of metal penetration; data on permeability, composition, and green strength of sand mix. Spinning speed of flask in centrifugal casting: factors governing it; pressure of metal against mold walls as function of rpm. Effect of casting temperature and time on product quality, especially freedom from blowholes and surface condition. Data on dimensional accuracy of castings. Composition of cupola iron used for casting and results of metallographic examination. (HB abstract)

Masi, O. and Erra, A.
THE X-RAY TESTING OF WELDS. A THOROUGH EVALUATION OF DEFECTS IN TERMS OF STATIC AND FATIGUE STRENGTH. [1959] 17p.
Order from ATS $21.45 ATS-02L341

Trans. of [la] Metallurgia Ital[iana] 1953, v. 45, no. 8, p. 273-283.

Neumayer, W. W.
RELATION BETWEEN TIME STUDY AND WAGE PAYMENT. [1959] 4p. 3 refs.
Order from SLA mi$1.80, ph$1.80 59-15696

Trans. of Werks[t]attstechnik [und Werksleiter] (Germany) 1930, v. 24, no. 24, p. 668-670.

Raess, Paul.
CLIP FOR AFFIXING CABLES AND PIPES TO A SUPPORT, tr. by J. C. Levy. 18 June 59, 2p. (3 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18287

Trans. of French patent 1,022,419, Group 5, Class 3; applied for 24 July 50, granted 17 Dec 52, pub. 4 Mar 53. (Application for patent filed in Switzerland 8 Feb 50 per statement of applicant.)

This clip comprises a U-shaped metal strip each arm of which is extended by at least one spike adapted to penetrate the support. The spikes are beveled so as to penetrate at an oblique slope into the support. The surfaces of the spikes are provided with roughenings forming a hook. The base of the U comprises a single arc or several interconnected arcs.

Schepers, Alexander and Bartholome, W.
CASE HARDENING OF FREE-CUTTING STEELS. [1959] [11]p.
Order from SLA mi$2.40, ph$3.30 59-20050

Trans. of Stahl und Eisen (West Germany) 1958 [v. 78, no. 24] p. 1745-1748.

Carburization and hardening behavior were studied for eleven plain carbon, sulfur and/or leaded free machining steels; five were Thomas, the rest were Siemens-Martin. The properties in tension, the grain size and the surface hardness were determined, as well as the change of hardness and of carbon content at a distance from the surface after 5 or 10 hr of carburizing at 900° in a mild or active agent followed by a simple hardening process at 900 or 770° by quenching in salt water. The surface decarburization during annealing was determined by hardening in gases having different effects or in a salt bath. The carburizing behavior of Thomas steels were lower or equal to that of the Siemen-Martins steels. Steels especially suitable for carburizing because of their homogenous structure are those similar to 9S20 with higher manganese content, and sulfur and leaded Thomas free machining steels killed with aluminum. Increased manganese content slightly lowers the carburizing properties. The lead addition lowers the carburizing ability of Siemens-Martin steels. The steels were prone to surface decarburization by heating before hardening, especially

from 900° and by double hardening from 900° and 770°. This affected the surface hardness and depth of hardness adversely. Hardening must take place in a media with increased carburizing ability such as water with 10% NaCl.

Smolyarenko, D. A.
STEEL PRODUCTION IN THE USSR. 24 Aug 59, 16p. (6 figs. omitted). JPRS: L-904-D.
Order from OTS $0.50 59-11602

Trans. of Stal (USSR) 1957, v. 17, no. 11, p. 968-976.

Topics discussed include: The growth of steel production; the development of the contemporary Martin aggregates; the development of the Martin-process technology; improving the quality of refractory materials used for steel-smelting aggregates; assimilation of advanced experience and technique; improving the quality of metal; and improving the organization of production.

Sysoyeva, V. V.
PREPARATION OF IRON-NICKEL ALLOYS BY ELECTRO-DEPOSITION FROM CHLORIDE ELECTROLYTES, tr. by J. J. Loferski. [1959] [9]p. 21 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20317

Trans. of *Zhurnal Prikladnoy Khimii (USSR) 1959, v. 32 [no. 1] p. 128-132.

To obtain platings of iron-nickel alloys of any composition, fhe following conditions are recommended: The electrolyte composition should be such that /Fe^{++}/ /Ni^{++}/ is 100 g/l (calculated on the basis of the metal in the form of chlorides); citric acid should be added to 15 g/l, pH = 3.0 ± 0.1. The values D_K = 40 A/in^2 and temperature = 70°C should be used. The anode current densities from the iron and nickel anodes are chosen in accordance with the ratio of metals in the alloy for a given electrolyte composition. The plated layers prepared in this way are compact, and in a series of cases (depending on composition) they have a semi-lustrous or shiny appearance. The thickness of the deposit can be made as much as 0.5 mm and more.

Tafelmeier, Hugo.
STRAIGHTWAY VALVE FOR SPRAYERS, PARTICULARLY THOSE DESIGNED FOR SPRAYING TREES, BUSHES, OR THE LIKE, tr. by FHB. 18 June 59, 5p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18292

Trans. of German patent 804,620, Class 45 k, Group 4 25; patented from 14 Jan 49, pub. 26 Apr 51.

The valve which regulates the feed of the spray liquid to the nozzle is mounted in the hand lever (a) of the spray pipe and is directly controlled by a hand lever (n) pivotably placed thereon. The shaft of the valve cone rests against the hand lever (n). The shaft of the valve cone, which is guided in the handle, is sealed by a sleeve fixed in its guide, through which it passes in a displaceable manner. To feed the spray liquid to the valve seat, longitudinal channels for the liquid are provided in the handle around the guide of the valve cone; these channels end in a common chamber which is connected with the valve seat and whose wall slantedly rises in the direction of the flow toward the middle, so that the spray liquid reaches the valve cone without substantial throttling. The valve seat is arranged in such a way that its smaller cross section opposes the arriving liquid. Thus, the liquid pressure acts only upon a smaller surface. A spontaneous opening of the valve, therefore, cannot as easily occur as in the opposite case, even when the valve spring is relatively weak.

Vey, Ven-lin.
NEW TYPE ELECTRODE, SHANGHAI-57-1, FOR WELDING OF CONSTRUCTIONAL STEELS [Novaya Marka Elektrodov "Shankhay-57-1" dlya Svarki Konstruktsionnoy Stali]. [1959] 1000 words.
Order from HB $2.80 HB-4668

Trans. of Svarochn[oye] Proizv[odstvo] (USSR) 1958, no. 1, p. 30-31.

Description of manufacture and properties of a Chinese-developed new type of electrode for welding constructional steels, which gives very high mechanical properties of weld and weld metal. Details on composition of coating and of raw materials going into it. Data on compositions of electrode wire, parent and weld metals. Results of microexamination of weld structures. Hardness measurements. Mechanical properties of weld metal and welds. (HB abstract)

Yermanok, M. Z. and Kleymenov, V. F.
AN EFFICIENT TECHNOLOGY FOR THE PRODUCTION OF RECTANGULAR ALUMINIUM TUBES. [1959] [6]p. M. 161.
Order from LC or SLA mi$1.80, ph$1.80 59-18769

Trans. of Tsvetnyye Metally (USSR) 1957 [v. 30] no. 5, p. 85-90.

A change in the technology of the production of rectangular aluminium tubes is described which makes possible a much higher surface quality and ensures a finished tube with more rigid dimensional limits. By using this new technology, the yield of acceptable tubes is increased by 15 or 20 percent, and the labor costs involved in producing 1 ton of acceptable tubes is reduced by 400 to 650 roubles. The application of this method whereby the semi-finished material is pressed through combination dies, gives rise to a considerable broadening of the range of rectangular aluminium tubes manufactured.

Transport, Traction and Hoist Facilities

AVTOMOBIL'NAYA PROMYSHLENNOST' (USSR) 1959 (Automobile Industry).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 5, p. 1-47, PB 141 110T-16
No. 6, p. 1-49, PB 141 110T-15

Consists of abstracts in English.

TRANSPORTATION, COMMUNICATIONS, AND ELECTRIC POWER IN THE USSR. [NO. 20, 25 SEP 59]. [1959] [46]p. 56 refs.
Order from LC or SLA mi$3.30, ph$7.80 59-19760

Trans. of unevaluated information selected from Russian-language publications.

Contents:
Highlights
General transportation
Railroad transportation
  General operations
  Individual railroad systems
  Electrification
  Construction
Maritime shipping
River shipping
Motor transport
Communications
  General (administrative affairs, Union Republic communications facilities, radio relay lines, line operations)
  Radio
  Telephone
  Television
  Postal communications
Electric power
  USSR in general
  Armenian SSR
  Belorussian SSR
  Estonian SSR
  Kazakh SSR
  RSFSR (central, Ural, Volga, West Siberia)
  Tadzhik SSR
(See also 59-18395, 59-18844, 59-19190)

Khachaturov, T.
TECHNOLOGICAL PROGRESS IN TRANSPORTATION (Tekhnicheskiy Progress na Transporte). 14 Jan 59 [5]p. AF 1255404.
Order from LC or SLA mi$1.80, ph$1.80 59-22208

Trans. of Izvestiya (USSR) 1958, no. 185, c. 1-7, p. 2.

Rozanov, V. G.
THE CHOICE OF TYPE OF BRAKE SYSTEMS FOR MOTOR TRAILERS (Vybor Tipa Tormoznykh Sistem dlya Avtomobil'nykh Pritsepov). July 59 [15]p. RTS no. 1108.
Order from LC or SLA mi$2.40, ph$3.30 59-18857

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1958, no. 2, p. 1-6.

Trailers with a carrying capacity of up to 2 tons should be equipped with hydraulic brake drives. Trailers of up to 7 to 10 tons should be equipped with pneumatic brakes. For a carrying capacity of 12 tons and more, electromagnetic drives are recommended. In trailers with many wheels and several braking mechanisms a pneumatic-hydraulic drive should be used for the brakes.

Vielmo, Oskar.
CONTROL VALVE, ESPECIALLY FOR PNEUMATIC BRAKES OF MOTOR VEHICLES. 28 July 59, 4p. (5 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18788

Trans. of German patent 685941, cl. 63 c, gr. 53 05, pat. 8 June 38, pub. 29 Dec 39, by Robert Bosch G. m. b. H., Stuttgart.

The invention concerns a control valve, especially for pneumatic brakes of motor vehicles with an operating member axially shiftable within a fixed seat, likewise constructed as a valve seat, for a valve disk covering both seats. The two valve seats are so constructed that in the case of small lifts of the movable valve seat from the middle position the annular space between the two seats in constricted, in the case of greater lifts, however, there is obtained again a normal width not throttling the passage for the pressure medium. (Extracted from the report)

Völker, Albert.
FLUID TRANSMISSION, ESPECIALLY FOR VEHICLE DRIVES. 22 June 59, 6p. (1 illus. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18293

Trans. of German patent 873,937, cl. 63c, gr. 34/01, pat. from 9 Jan 40, laid open to inspection 21 Aug 52, grant announced 5 Mar 53, pub. 20 Apr 53, by Aktiengesellschaft für Unternehmungen der Eisen-und Stahlindustrie.

The invention provides a fluid transmission which can be used without the total-seal packings, but in which the oil is entirely incapable of foaming as in the case of conventional labyrinth packings. Primarily, this result is obtained because the packed area of each transmission shaft is provided in a chamber (supply chamber) which remains under static pressure. (Extracted from the report)

MATERIALS

Späth, Wilhelm.
BASIC QUESTIONS OF WEAR (Grundfragen des Verschleisses). [1959] [9]p. 14 refs. No. 199.
Order from SLA mi$1.80, ph$1.80 59-20059

Trans. of Verein Deutscher Ingenieure. Zeitschrift (West Germany) 1952 [v. 94] no. 25, p. 829-832.

Wear appears on most all technical products. Therefore it seems appropriate, using earlier considerations (Verein Deutscher Ingenieure. Zeitschrift 91: 471-75, 1949), to establish suitable characteristic values for the comprehension of wear behavior. Using various examples--wear of automobile tires, of steel wheels, wear to tools and durability of materials materials--the possibilities are given of determining the magnitude of wear and its effects in a suitable manner. (Author) (See also 59-15182)

Takashima, Saburo.
STUDY ON THE AMORPHOUS CALCIUM HYDROXIDE. [1959] 10p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-17896

Trans. of Semento Gijutsu Nenpo (Japan) 1956, v. 10, p. 51-56.

The formation of amorphous $Ca(OH)_2$ was studied by an X-ray method and its amount was determined. The amount of crystalline and amorphous $Ca(OH)_2$ formed as a function of hydrating temperature and quick lime properties was studied. A chemical method was developed for the determination of amorphous $Ca(OH)_2$. The amount of amorphous $Ca(OH)_2$ formed in hydrated cement mixtures will be affected by the addition of powdered gypsum and other mixing materials. (Author's summary)

Ceramics and Refractories

OGNEUPORY (USSR) 1959 [V. 24] (Refractories).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 4, p. 145-192, PB 141 134T-16
No. 5, p. 193-240, PB 141 134T-17

Consists of abstracts in English.

STEKLO I KERAMIKA (USSR) 1959 [VOL. 16] NO. 5, P. 1-44 (Glass and Ceramics). [1959] [19]p. SOV-72-59-5-(1-23)/23.
Order from OTS $0.60, $3.50/6 mo. PB 141 068T-15
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Becker, Gustav and Hoffman, Karl-Heinz.
DEVICE FOR MEASUREMENT AND/OR CONTROL OF THE LEVEL OF GLASS IN GLASS-MELTING FURNACES OR SIMILAR DEVICES. [1959] [8]p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-17091

Trans. of German patent 1,019, 805, G 17813, IVc/32 a, appl. 18 Aug 55, pub. of appl. and issue of pat. 21 Nov 57, by Glaswerke Ruhr Aktiengesellschaft, Essen-Karnap.

According to the invention, one or two electrodes made of an appropriate material (for instance, platinum) are built into the melting furnace or delivery mechanism at a determined distance from each other and at a constant height so that the change of the level of glass is followed by an increase or decrease of the surface of the electrodes which are dipped into the glass. The electrical resistance in the gaps between one electrode and the earth or between both electrodes thus gives a measure of the level of the glass itself. Both electrodes can with good results be made of platinum sheet which dips into the glass at an obtuse angle. A still greater sensitivity is obtained by using cone-shaped electrodes in which the angle at the apex of the electrodes is kept as flat as possible.

Engel, Fritz.
THE ELECTROLYSIS OF GLASS IN ELECTRON TUBES. [1959] 7p.
Order from ATS $10.65 ATS-07L34G

Trans. of Vakuum-Tech[nik] (Germany) 1959, v. 8, no. 2, p. 44-47.

Jenckel, Ernst.
THE CONNECTION BETWEEN MELTING TEMPERATURE AND FREEZING TEMPERATURE OF GLASSES (Über den Zusammenhang zwischen Schmelztemperatur und Einfriertemperatur der Gläser). [1959] [4]p. 12 refs. No. 227.
Order from SLA mi$1.80, ph$1.80 59-17963

Trans. of Kolloid-Zeitschrift (West Germany) 1953, v. 130, no. 1, p. 64-65.

Fuels, Lubricants, and Hydraulic Fluids

DATA ON COKING OPERATIONS AND COAL PRODUCTION IN CHINA. 13 Mar 59, 7p. JPRS 589-D.
Order from OTS $0.50 59-11462

Trans. of Mei-t'an Kung-yeh (Chinese People's Republic) 1958, no. 22, p. 12-13, 18 and 28.

A coke kiln is described which is capable of producing 1,000 tons monthly. This kiln was designed by the workmen and staff of the Su-feng Coke Plant of the Chung-ho Industrial Company in Han-tan City, Hopeh Province. Information is also included on methods used to improve oil recovery in native coking operations, and daily coal production records of various Hsiens in October and November 1958 are tabulated.

Bashilov, A. A., Kvochkin, F. A., and Stolov, A. I.
SOVIET ENGINE FUEL SPECIFICATIONS. 4 May 59 [24]p. (1 table omitted) AF 1255759.
Order from LC or SLA mi$2.70, ph$4.80 59-22191

Trans. of Russian mono. Kompaundirovaniye Motornykh Topliv 1958, p. 61-83.

Garif'yanov, N. S. and Aksel'rod, M. M.
MAGNETIC RESONANCE IN SOME COALS. [1959] 6p.
Order from ATS $9.95 ATS-47L33R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959, v. 4, no. 3, p. 64-68.

Ivanov, K. I., Lipshteyn, R. A., and Mikhel'son, A. Ya.
A NEW METHOD FOR EVALUATING THE IN-SERVICE BEHAVIOR OF TRANSFORMER OILS [Novyy Metod Otsenki Povedeniya Transformatornykh Masel v Ekspluatatsii]. [1959] 4p.
Order from ATS $6.00 ATS-12L31R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1958, v. 3, no. 12, p. 46-48.

Ivanov, V. S. and Fridman, S. M.
SILICON ORGANIC LIQUIDS (LUBRICATING OIL OKB-122 AND GREASE VT MKHP 2238-50 USED FOR INSTRUMENTS). 20 Aug 59 [5]p.
AF 1256018.
Order from LC or SLA mi$1.80, ph$1.80 59-19712

Trans. of mono. Masla i Konsistentnyye Smazki (Lubricating Oils and Greases) Moscow, 1957.

Kreyn, S. E. and Makasheva, O. P.
AIR SHOCK STABILITY OF MINERAL AND SYNTHETIC LUBRICATING OILS (Ustoychivost' Neftyanykh i Sinteticheskikh Masel k Vozdushnomu Udaru). 19 Jan 59 [11]p. 1 ref. AF 1255440.
Order from LC or SLA mi$2.40, ph$3.30 59-22202

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1958 [v. 3] no. 8, p. 9-15.

The air shock stability of lubricating oils was studied in a special apparatus. At the bottom of this apparatus was a clean asbestos felt pad on which two drops of the oil to be tested were deposited. After the apparatus had been hermetically closed, it was connected to an air line in which a steady pressure of 200-205 atmospheres was maintained. At the right moment, air was admitted which struck the oil sample with an impact of 200 atmospheres. Thereupon the air shock stability of the oil sample was macroscopically determined by examining the asbestos pad: Low stability caused the oil to burn, leaving a black sooty smudge on the pad. Results showed that the air shock stability of mineral lubricating oils is neither connected with their oxidation stability, nor dependent on the chemical structure, being essentially determined by their fractional composition or vapor tension. Highly viscous oils (of the MK-22, MS-20 type, and similar) show the highest air shock stability, but fail to meet operating requirements due to their poor viscosity-temperature characteristics. Low-viscosity oils lack air shock stability. Their air shock stability can not be improved by the addition of viscosity-increasing thickeners. Among the investigated synthetic oils, some pentaerythrite and diethylene glycol esters were found to have the highest air shock stability. The air shock stability of synthetic oils based on these products matched that of high-viscosity mineral oils. Furthermore, the synthetic oils superseded these high-viscosity mineral oils by their viscosity-temperature characteristics. It was possible to obtain oils having good viscosity-temperature characteristics and high air shock stability by thickening pentaerythrite and diethylene glycol esters with vinipol and, in particular, with polymethacrylates

Tereshchenko, Ye. R. and Tararyshkin, M. Ye.
STUDY OF THE THERMAL STABILITY OF SULFUROUS FUELS (Issledovaniye Termicheskoy Stabil'nosti Sernistykh Topliv). 29 June 59 [7]p. (2 figs. omitted). AF 1255913.
Order from LC or SLA mi$1.80, ph$1.80 59-18454

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1959 [v. 4] no. 2, p. 25-27.

Investigations were made of the thermal stability of a T-2 fuel of wide fractional composition (GOST 8410-57), two TS-1 fuel samples (GOST 7149-54), a fuel of the TS-1 type produced from Tuymazy crude and subjected to hydrofining, a fuel of the TS-1 type produced from Ishimbay crude, and a fuel of the TS-1 type produced from a high-sulfur crude. The tests were made under static conditions in a bomb and by pumping the fuels through a filter integrated into a special unit which duplicated the operation of an engine fuel filter. The thermal stability of the fuel was estimated according to the amount of sediment measured in mg/100 ml of fuel. Kerosine type fuels of wide fractional composition, produced from eastern sulfurous crudes, form insoluble sediment at temperatures above 100°C. Through hydrofining it is possible to produce highly stable fuels.

Turskiy, Yu. I.
SEMI-COKING OF COAL FINES IN A MOVING BED (Polukoksovaniye Ugol'noy Melochi v Podvizhnom Sloye). [1959] 6p.
Order from ATS $9.50 ATS-99L33R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1958, v. 3, no. 12, p. 41-46.

Vipper, A. B., Mosikhin, E. P., and Belova, S. R.
SOME RELATIONSHIPS IN THE LOSS OF DETERGENT ADDITIVES FROM OIL. [1959] 6p.
Order from ATS $7.50 ATS-76L31R

Trans. of Khim[iya] i Tekhnol[ologiya] Topliv i Masel (USSR) 1959, v. 4, no. 1, p. 59-63.

Yeremenko, V. S., Popov, V. I., and Khalif, A. L.
NATURAL GASOLINES AND THEIR USES (Gazovyye Benziny i ikh Primeneniye). 19 Dec 58 [8]p. 4 refs.
AF 1187449.
Order from LC or SLA mi$1.80, ph$1.80 59-22193

Trans. of Gazovaya Promyshlennost' (USSR) 1958, no. 8, p. 43-47.

Leather and Textiles

Glenz, O.
UPTAKE OF DISPERSE DYES BY POLYESTER FIBERS. [1959] 10p.
Order from ATS $14.95 ATS-34L34G

Trans. of Melliand Texilber[ichte] (West Germany) 1959, v. 40, p. 413-417.

Grobe, V. and Meyer, K.
INVESTIGATION OF THE INFLUENCE OF THE PRECIPITANT ON FILAMENT FORMATION DURING THE WET SPINNING OF POLYACRYLONITRILE. [1959] 16 p.
Order from ATS $21.65 ATS-69L33G

Trans. of Faserforsch[ung] u[nd] Textiltech[nik] (Germany) 1959, v. 10, no. 5, p. 214-224.

Hess, Kurt.
LONG-PERIOD INTERFERENCES IN SYNTHETIC FIBERS AND A NEW FIBER MODEL. [1959] 14p. 9 refs.
Order from SLA mi$2.40, ph$3.30 59-15777

Trans. of Journal of Colloid Science. Supplement (U. S.) 1954, no. 1, p. 135-145.

Klare, H. and Grobe, A.
INVESTIGATION OF THE PROBLEM OF FILAMENT FORMATION FROM VISCOSE SOLUTIONS. [1959] 6p.
Order from ATS $9.95 ATS-35L34G

Trans. of Faserforsch[ung] u[nd] Textiltech[nik] (Germnay) 1959, v. 10, no. 4, p. 155-158.

Nagano, Masamitsu.
AGING OF VISCOSE. [1959] 3p.
Order from LC or SLA mi$1.80, ph$1.80 59-17843

Trans. of Japanese official patent proclamation Showa 28-5368, 1953, request of official patent rept. 19 Oct 53, presentation of request 21 Nov 51, spec. appl. no. Showa 26-15430, by Kurashiki Rayon Company, Ltd., Kurashiki representative: Seko Adachi.

The bubble-removing aging process for viscose is characterized by a short-term treatment of viscose containing an alkali-resistant surface-active agent at temperatures ranging from over 30°C to below 50°C.

Schwen, G. and Schmidt, G.
SOME EXPERIMENTS ON THE INFLUENCE OF DYESTUFF, FIBER AND ATMOSPHERE UPON FASTNESS TO LIGHT. [1959] 16p.
Order from ATS $18.90 ATS-49L33G

Trans. of Melliand Textilber[ichte] (West Germany) 1959, v. 40, no. 4, p. 403-408.

Paints and Finishes

Kraus, Alfred.
PLASTICIZERS FOR NITROCELLULOSE LACQUERS. XIX. THE SOLVENT POSER POWER OF VARIOUS PLASTICIZERS FOR NITROCELLULOSE OF VARYING N_2 CONTENT. [1959] 2p. [last 3 paragraphs 1 table omitted].
Order from SLA mi$1.80, ph$1.80 59-20231

Trans. of Farbe u[nd] Lack (Germany) 1940 [v. 46, no. 38] p. 333-334.

Yankelev, L. F.
THE FIRE RESISTANCE OF HEAT INSULATION WITH COMBUSTIBLE COATINGS (Ob Ognestoykosti Teployzolyastii s Goryuchimi Pokrytiyami). Nov 57 [5]p. C. T. S. no. 398.
Order from LC or SLA mi$1.80, ph$1.80 59-16989

Trans. of Stroitel'naya Promyshlennost' (USSR) 1956, no. 3, p. 29-31.

The tests were carried out in three stages on designs containing organic materials in the coating layer (bituminous paste roofing materials and plastering), as well as on designs containing combustible materials in the form of insertions in the basic inorganic layer of mineral felting (from 2 to 3 per cent bitumen), and designs in which lathing is used instead of wire mesh under the external plastering and so on. The heat-insulating design was mounted on a pipe 3 000 mm long with an internal diameter of 255 mm. Hot gases obtained by burning fuel in stoves were made to penetrate the pipe and were then ejected into the atmosphere through a chimney. In the first stage, the designs were exposed to the local effect of a flame from a blowpipe for a period of 15 to 20 min., the inside of the metal pipe was not tested at this stage. In the second stage, a fire of short duration above the operating equipment was simulated. Hot gases, obtained by burning fuel in a stove, heated the pipe from the inside until the external surface attained a temperature of 60°, which is normally the limit for the external surface of a combustible heat insulation. When this temperature was attained, the surface of the heat insulation was sprinkled with paraffin and was heated for half an hour with the flame from the burning paraffin in the drip pan, placed under the insulation. In the third stage, a fire above the operating equipment was simulated which had occurred as a result of long exposure to flames of a single section of the pipe. As in the second stage, the temperature of the insulation surface was maintained steady at 60°. The test results are tabulated.

Photographic Materials

ZHURNAL NAUCHNOY I PRIKLADNOY FOTOGRAFII I KINEMATOGRAFII (USSR) 1959, V. 4, NO. 4, P. 241-320 (Journal of Scientific and Applied Photography and Cinematography). [1959] [21]p. SOV-77-4-4-(1-19)/19.
Order from OTS $0.50, $3.00/year PB 141 073T-7
Foreign $0.75, $4.50/year

Consists of abstracts in English.

Fischer, Fritz.
PROCESS AND DEVICES FOR THE PRODUCTION OF STEREOSCOPIC FILMS, tr. by PCC. 17 June 59, 20p. (16 figs. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-18284

Trans. of French patent 750,154, Group 12, Class 2; application 23 Jan 33, granted 22 May 33, pub. 5 Aug 33; application in Germany 23 Jan 32.

The invention relates to a process and to devices for the projection of stereoscopic images located on lenticular films and is characterized in that the projection surface consists of screen elements, each of which in the form of a cylindrical telescope system providing angular enlargement.

Plastics

PLASTICS: I. EPOXIES. II. POLYESTER AND POLYETHER RESINS. III. POLYCARBONATES. IV. ALKYDS. [1959] [14]p.
Order from RIS RIS TB-180, sec. 1-4

Abstracts of trans. from German, Belgian and Italian patents, patent applications and research papers.

PROCESS OF PRODUCING FOAMED MATERIALS BASED ON POLYURETHANE, tr. by J. C. Levy. 16 June 59, 4p.
Order from LC or SLA mi$1.80, ph$1.80 59-18288

Trans. of French patent 1,106,527, gr. 14, cl. 8, appl. 14 Aug 54, granted 20 July 55, pub. 20 Dec 55, by Farbenfabriken Bayer Aktiengesellschaft, Germany (appl. filed in Germany 19 Aug 53 in name of applicant).

The process is characterized in that the reaction of compounds containing (re)active atoms of hydrogen with di- or polyisocyanates is carried out in the presence of salts of dicarboxylic acids and tertiary amines.

Bratring, Kurt.
PROCEDURE AND APPARATUS FOR THE PREPARATION OF SOLUTIONS OF CELLULOSE ESTERS FOR MANUFACTURING OF FILMS. [1959] [8]p. (2 figs. omitted) 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-17841

Trans. of German patent application B 32 292 (IV c/39 b) Aug 54.

A procedure is described for preparing films and thin sheets, especially photographic and motion-picture films, from cellulose esters, especially cellulose triacetate, cellulose propionate, cellulose butyrate, or from mixture of those esters. In this procedure solvents of high dissolving properties are used jointly with, or are substituted for, solvents or jellifying substances that act as feebly dispersing or swelling agents only, and the swelled mass is converted into a homogeneous nodule-free solution by means of a mechanical treatment applied in appropriate apparatus, e.g., gearing pumps, and in homogenizers in which the material is pressed through narrow passages, such as slits etc., the treatment being combined with filtration, if necessary, and followed by the conventional process of pouring in a film-producing machine. After congealing into a jelly, the film is removed from its support and dried, after having been submitted, if so desired, to the processes of recuperation and application of tension.

Honsberg, Kurt.
PRESS FOR MOLDING ARTICLES OF RUBBER, SYNTHETIC RESIN, OR THE LIKE PLASTIC MATERIALS. 6 July 59, 3p. (6 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-18784

Trans. of German patent 423,826. cl. 39a, gr. 19, pat. 19 Feb 24, pub. 14 Jan 26.

The invention provides, opposite each end of a column of molds kept under pressure by a pressure piston, a pair of movable abutments engaging between the molds, one of these pairs being displaceable by means of a second pressure piston which counteracts the first pressure piston. This device makes it possible to remove one mold from the press or insert one therein without reducing the pressure effect upon the other forms. (Extracted from the report)

Ono, H., Tanizaki, Y., and Tanaka, I.
DICHROISM OF PYRAZOLONE DYES IN STRETCHED POLYVINYL ALCOHOL SHEETS. [1959] 9p.
Order from ATS $20.25 ATS-21L34J

Trans. of [Nihon] Shashin Gakkai Kaishi (Japan) 1958, v. 21, p. 115-120.

Schnell, H.
POLYCARBONATES; A GROUP OF NOVEL SYNTHETIC THERMOPLASTICS. 26 June 59, 27p. 66 refs.
Order from RIS $32.00 RIS rept. 61053

Trans. of Angewandte Chemie (West Germany) 1956, v. 68, no. 20, p. 633-640.

The polyesters of carbonic acid which we prepared from 4,4'-dihydroxydiphenylalkanes exhibit a high melting point, high freezing temperature, in many cases solubility in a number of organic solvents, favorable mechanical and electrical properties up to high temperatures, low water absorption, and stability to hydrolyzing agents and heat, even in the presence of air. They can be processed from solution or melt by means of the common techniques and equipment. These characteristics, coupled with the ready availability of many of the intermediates and the possibility of varying the properties within wide limits should adapt this group of plastics to various yields of application alongside the previously known synthetic resin materials. (Author's summary)

Rubber and Elastomers

Kollegin, A. V. and Koropaltsev, N. V.
APPARATUS FOR CONTINUOUS-FLOW VULCANIZATION OF RUBBER ARTICLES (Apparat dlya Nepreryvno-potochnoy Vulkanizatsii Rezinovykh Izdelii). July 59 [8]p. RTS no. 1057.
Order from LC or SLA mi$1.80, ph$1.80 59-18948

Trans. of Khimicheskaya Promyshlennost' (USSR) 1958, no. 3, p. 58-59.

Two variations of a simple high-capacity apparatus for continuous-flow vulcanization of rubber articles are described. Moulds containing the semi-finished articles for vulcanization are fixed on a conveyer belt which moves through a tubular duct in which hot air is circulated at a high rate. A closed hot air circuit of constant volume in the duct of the apparatus is achieved by supplying hot air from a heating unit to an air distribution chamber located in the center of the tubular duct. The hot air which has been used is returned to the heating unit by way of tapered circular chambers which slow down the rate of flow of the air and are fitted onto the ends of the duct. Two symmetrical currents of hot air are thus formed in the duct, which travel in opposite directions from its center. The high rate of air-flow increases the coefficient of heat transfer to the articles being vulcanized and permits the vulcanization time to be approximately that of steam vulcanization.

Ulbrich, R.
SYNTHETIC RUBBER IN THE U. S. S. R. [1959] [27]p. (1 photo omitted) 26 refs.
Order from SLA mi$2.70, ph$4.80 59-15351

Trans. of G[ummi] und A[sbest] (West Germany) 1959, v. 12 [no. 3] p. 146-156.
Another translation is available from SLA mi$2.40, ph$3.30 as 59-17214 [1959] 13p.

This survey includes a tabulation of the best known types of synthetic rubbers produced in the USSR, with information of type designation, chemical composition, and brief technical description. The type that will be produced on the largest possible scale, with little consideration given to cost, is 1, 4-cis polyisoprene, a product which from a structural standpoint is similar to natural rubber. It is a stereo-specific polymer of high regularity obtained through the aid of Ziegler catalysts or with lithium dispersions. This product is now being prepared on a semi-industrial scale under the designation SKI.

Wood and Paper

Fink, P. and Schweizer, R.
DETERMINATIONS OF THE FOLDING ENDURANCE OF PAPERS. Sep 59, 12p. (2 figs. 1 table omitted) 9 refs.
Order from SLA mi$2.40, ph$3.30 59-20220

Trans. of Textil-Rundschau (Switzerland) 1958, v. 13, no. 12, p. 694-704.

Investigations were made in various Swiss paper laboratories on a number of different papers using the test methods appropriate in each case. The results were markedly affected by a number of factors. The method of folding (double folding under tension or compression folding) plays an important part and, dependent on the nature of the paper being tested, varies in its effect. In addition, especially in the case of special papers, considerable differences can prevail as between the individual testers which are based on similar principles. In the Frank, Kohler-Molin fatigue-bending testers the design of the clamp has an extremely great effect. Although with the Kohler-Molin tester both clamps should be practically the same, in ten cases involving the tester employed in the investigation, the results obtained with the left-hand and right-hand clamps were statistically different, also ones where $P = 5\%$. Neither one nor other clamp gives the higher value. Evidently each method defines folding endurance in a somewhat different way so that the results merely represent characteristics which are rigidly related with a certain tester or at the most to a certain type of tester. The Schopper, Kohler-Molin and L'Homme and Argy double folders appear to give roughly the same qualitative assessment of paper.

Gersonde, Martin.
TOXIC SENSITIVITY OF DIFFERENT STRAINS OF WOOD-DESTROYING FUNGI (Uber die Giftempfindlichkeit Verschiedener Stämme Holzzerstörender Pilze). Apr 59, 10p. (5 figs. omitted) Trans. no. 128.
Order from NRCC mi$0.50, ph$3.00 NRCC C-3099

Trans. of Holz als Roh- und Werkstoff (West Germany) 1958, v. 16, no. 11, p. 221-226.

Higuchi, Takayoshi.
BIOCHEMICAL STUDY OF WOOD-ROTTING FUNGI. Rept. no. 4 on The Study on the Terminal Oxidase System in Respiration. [1959] 21p. 16 refs.
Order from SLA mi$2.70, ph$4.80 59-20087

Trans. from [Nihon Ringaku Kaishi] (Japan) v. 37, no. 4.

Kohlmeyer, Jan.
WOOD-DESTROYING FUNGI IN SEA-WATER (Holzzerstörende Pilze im Meerwasser). Apr 59, 10p. (10 figs. omitted) 23 refs. Trans. no. 129.
Order from NRCC mi$0.50, ph$3.00 NRCC C-3108

Trans. of Holz als Roh- und Werkstoff (West Germany) 1958, v. 16, no. 6, p. 215-220.

Marine soft-rot fungi are shown to have a symbiotic relationship with gribbles, which disseminate the spores into the wood substance. The fungi in turn through enzyme action partly decompose cellulose so that the marine animals can assimilate it.

Muller-Rid, W. and Pausch, G.
CONTRIBUTION TO THE PROBLEM OF WATER REMOVAL FROM FIBROUS WEBS BY MEANS OF VACUUM. [1959] 9p. (12 figs. omitted) 6 refs.
Order from SLA mi$1.80, ph$1.80 59-20100

Trans. of Wochenbl[att fur] Papierfabrik[ation] (West Germany) 1958, v. 86, no. 8, p. 298-308.

The effect and economics of vacuum dewatering plant are decisively influenced by the physical nature of the wet layer of fibre which on the paper-making machine is characterized by the basis weight of the fibrous web and its capacity for giving up water. Using conveniently-sized experimental equipment a study was made of the relationships prevailing as between the operating conditions for a vacuum dewatering plant and the technological nature of the wet fibrous web from which the water is to be removed. This gave characteristic curves which render it possible to design vacuum dewatering plants to suit any desired operating conditions: i.e., to determine in advance the ultimate solids content and to select suitable vacuum plant dimensions. In addition these characteristics permit determination of the capacity limits of such plants. Relevant literature is discussed and the evaluated test results are compared with those obtained by other workers. (Author)

MATHEMATICS

JOURNAL OF APPLIED MATHEMATICS AND MECHANICS, 1959, VOL. 23, NO. 1, Sep 59, 302p.
Order from PP $35.00/year.

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1959, v. 23, no. 1, p. 3-208.

LENINGRAD U. VESTNIK (USSR) 1959, NO. 1, P. 5-158, SERIYA MATEMATIKI, MEKHANKI I ASTRONOMII, NO. 1 (Herald of Leningrad University. Mathematics, Mechanics, and Astronomy Series). [1959] [17]p. SOV-43-59-1-(1-17)/17.
Order from OTS $0.60, $2.25/year PB 141 037T-5
Foreign $0.85, $3.25/year

Consists of abstracts in English.

LENINGRAD U. VESTNIK (USSR) 1959, NO. 7, P. 5-160. SERIYA MATEMATIKI, MEKHANIKI I ASTRONOMII, NO. 2 (Herald of Leningrad University. Mathematics, Mechanics, and Astronomy Series). [1959] [13]p. SOV-43-59-7-(1-17)/17.
Order from OTS $0.60, $2.25/year PB 141 037T-6
Foreign $0.85, $3.25/year

Consists of abstracts in English.

MATEMATICHESKIY SBORNIK (USSR) 1959, V. 47, NO. 4, P. 397-430 (Mathematics Symposium). [1959] 7p. SOV-39-42-4-(1-4)/4.
Order from OTS $0.50, $3.00/6 mo. PB 141 033T-17
Foreign $0.75, $4.50/6 mo.

Consists of abstracts in English.

Druzhinin, G. V.
DEPENDENCE OF THE EFFECTIVENESS OF REDUNDANCY ON OPERATING TIME OF THE SYSTEM, tr. by J. R. Rosenblatt. Jan 59, 14p. 6 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-16733

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1958, no. 11, p. 83-86.

A system is considered with an active standby, i.e. one which is fitted with a switching system for switching off the defective and switching on the reserve element. It is assumed that the basic and the reserve circuits have equal operating conditions. For providing standby equipment for equally reliable parts of the system with an initial probability of failure $Q_0(t)$ and applying equally reliable switching systems, the mathematical expression of the reserve function can be written thus:

$$R(Q_0) = 1 - \left\{1 - [1 - (1 - q_n)(1 - Q_0)^{1/m}]^k\right\}^m \quad (1)$$

where q_n is the probability of failure of the circuits of the switching system serving the standby section; m is the number of standby sections; and k is the number of used equipment assemblies. The reserve functions calculated by means of this formula are graphed for several systems. The operation time of the system is shown to be an important parameter in redundancy.

Gantmacher, F[eliks] R[uvimovich].
APPLICATIONS OF THE THEORY OF MATRICES, tr. by J. L. Brenner, D. W. Bushaw and S. Evanusa. 1959, 317p. 72 refs.
Order from IP $9.00

Partial trans. with revisions (second part) of Russian mono. [Teoriya Matrits] 1954.

Chapters translated are entitled: (1) Complex symmetric, antisymmetric and orthogonal matrices; (2) Singular bundles of matrices; (3) Matrices with nonnegative elements; (4) Applications of the theory of matrices to the study of systems of linear differential equations; and (5) The Routh-Hurwitz problem and related questions. The material is intended as a contribution to applied mathematics. The chapter on the Routh-Hurwitz problem gives the theory which a control engineer needs for studying stability of a servomechanism, and the algorithm of Routh can be used directly to evaluate the roots of a complex or real polynomial. The chapter on matrices with nonnegative elements is useful for numerical analysis and engineering.

Tintner, G.
STOCHASTIC LINEAR PROGRAMMING (Les Programmes Lineaires Stochastics). [1959] [14]p. 36 refs.
Order from SLA mi$2.40, ph$3.30 59-20158

Trans. of Revue d'Economie Politique (France) 1957, no. 67, p. 208-215.

This paper was presented at the European Congress of Econometrica held August 30 to September 1, 1956 in Aix-en--Provence. It consists of sections on (1) linear programming, (2) stochastic linear programming and (3) approximations of the probability distribution.

Volkov, Ye. A.
NEW FORMULAE FOR COMPUTING ELEMENTARY FUNCTIONS ON A BESM (HIGH-SPEED ELECTRONIC COMPUTER). [1959] [9]p. 2 refs. M. 156
Order from LC or SLA mi$1.80, ph$1.80 59-18764

Trans. of unidentified mono. pub. by Inst. of Precision Mechanics and Computing Technique, A[cademy] of S[ciences] USSR, Moscow, 1957.

Some formulae with numerical values of factors are given for computing elementary functions using the BESM. The formulae provide high accuracy of computations as well as minimum computer time. The formulae and methods of their constructing can be used in developing standard subroutines for other computer types. (Author)

MECHANICS

REFERATIVNYY ZHURNAL. MEKHANIKA (USSR) 1957 (Journal of Abstracts, Mechanics).
Order from OTS $1.50, $8.00/6 mo.
Foreign $1.75, $9.50/6 mo.

No. 3, p. 1-165, PB 141 124T-19
No. 4, p. 1-59, PB 141 124T-18
No. 5, p. 4-142, PB 141 124T-17

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

Johansson, Carl Hugo and Weibull, Göran.
HARDNESS MEASUREMENTS ON WIRE SPECIMENS. [1959] 5p. (10 figs. omitted) 2 refs.
Order from SLA mi$1.80, ph$1.80 59-20233

Trans. of Zeitschrift für Metallkunde (Germany) 1937, v. 29 [no. 12] p. 418-420.

Impressions made with a pressure cylinder of hardened steel, arranged at right angles to the wire are used for measuring the hardness of wire specimens. The width parallel (d_{ii}) and at right angles to ($d_{\perp}$) the wire axis is measured as a function of the ram pressure (P) on the elliptical projection area of the impression. In the P-q diagram, wherein q is the magnitude $\pi/4 \cdot d_{ii} \cdot d_{\perp}$ in general, straight lines are obtained whose slope characterizes the hardness. The method is especially suitable for observing the hardness changes in studying hardening as a function of time. It has the advantage that the amount of specimen necessary for the hardness measurement is very small and that a form of specimen which is suitable for the investigation of other properties can also be used for the hardness measurement. (Author)

Kostyuk, A. G.
CALCULATION OF THE PROFILE OF A ROTATING DISK UNDER CREEP CONDITIONS (Raschet Profilya Vrashchayushcherosya Diska dlya Usloviy Polzuchesti). 14 Mar 55 [10]p. 3 refs. (foreign text included). M-V. Trans. no. 2063; M. 40.
Order from LC or SLA mi$1.80, ph$1.80 59-18663

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1953, v. 17, p. 615-618.

The problem of the calculation of the profile of a thin rotating disk under the condition of steady creep is examined according to the given law of variation in stress or deformation around the radius. An approximate calculation of the profile of an irregularly heated disk can be determined by integration from the given characteristic or deformed condition. The results of experimental investigation into the condition of fracture during creep under a complex stress condition indicate the possibility of assuming the greatest principal stress as a stability criterion. (M-V abstract)

Luk'yanov, P. I., Gusev, I. V., and Nikitina, N. I.
THE PRESSURE EXERTED BY A COMPACT MOVING BED OF GRANULAR MATERIAL ON THE WALLS OF A SHAFT TYPE APPARATUS. [1959] 8p.
Order from ATS $9.45 ATS-09L32R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959, v. 4, no. 1, p. 63-68.

Moser, Heribert.
ON HARDNESS (Über die Harte) [1959] [14]p. (2 tables omitted) 8 refs. No. 234.
Order from SLA mi$2.40, ph$3.30 59-17965

Trans. of Zeitschrift fur Metallkunde (West Germany) 1953, v. 44, no. 2, p. 43-50.

Penetration tests were made on the same material both in the cylinder pressure test and in the ball test, with test balls of varying radius and varying metallic materials. Thereby the method of simultaneous determination of modulus of elasticity and hardness, developed by E. Kappler (Z. angew. Phys. 1: 564, 1949) was fully confirmed. In addition a new theory of hardness was tested in parallel tests with cylinder pressure and ball apparatus. A material constant C was found, which is characteristic for the plastic phenomenon in the hardness test. The hardness definitions dependent on load, customary hitherto, are replaced by a hardness definition which is independent of the test conditions. The load dependency of the plastic and total approach in the penetration test was investigated and explained by an amplification of the Kappler considerations. According to the preceding considerations and results, hardness is a characteristic value which is determined not only by the plastic behavior of the material, but also by the elastic properties of the specimen and test ball. (Author's summary)

Schleicher, Ferd.
BUCKLING STRESSES ON RECTANGULAR FIXED PLATES. [1959] [13]p. 1 ref. R. T. P. Trans. no. 2472.
Order from SLA mi$2. 40, ph$3. 30 59-17711

Trans. of Mitt[eilungen aus den] Forschungs[anstalten] (Germany) 1931, v. 1 [no. 8] p. 186-193.

The conditions in which flat plates of uniform thickness tend to buckle when stressed by forces acting in the same plane, have been examined for various cases of rectangular and circular plates. This paper shows the conditions for buckling and the numerical calculation of buckling stresses for a further case of a rectangular plate, in which the validity of Hooke's law is assumed. (Author)

Volkersen, Olaf.
THE DISTRIBUTION OF FORCES ON THE RIVET IN STRETCHED JOINTS WITH CONSTANT STRAP CROSS SECTION. [1959] [13]p. 5 refs. R. T. P. Trans. no. 2373.
Order from SLA mi$2. 40, ph$3. 30 59-17689

Trans. of Luftfahrtforschung (Germany) 1938, v. 15, no. 1/2, p. 41-47.

An investigation was made of the distribution of rivet loads in simple stretched strap joints with constant strap cross sections. The equations of the corresponding rivet deformation were set up for the limiting cases of simple elastic and plastic deformation of the rivets, and compared. The distribution of the rivet loads in these straps can be approximately determined by the stress-strain equations and the experimentally obtained load deformation curves of the equivalent single row rivet joints. The experiments showed that the rivet load distribution was extremely irregular in low loading stages. When the load is increased to breaking point the forces on the rivets are partly equalized owing to permanent set of the end rivets. The residual stress still present at the instant of collapse - and the subsequent loss of strength of the strap, contradicting the usual assumption that all rivets are equally loaded, was determined for one type of butt strap in relation to the number of rivets, and plotted. (Author's summary)

Vorontsov, G. V.
THE PROBLEM OF STABILITY ANALYSIS OF COMPLEX FRAMEWORKS BY THE RESOLUTION INTO THE SIMPLEST EQUISTABLE SYSTEMS (K Voprosu o Raschete na Ustoychivost Slozhnykh ram Sposobom Raschleneniya ikh na Prosteyshiye Ravnoustoychivyye Sistemy). Oct 58 [8]p. 3 refs. TIL/T.4884; M. 118.
Order from LC or SLA mi$1.80, ph$1.80 59-18737

Trans. of Politekhn[icheskiy Institut] Novocherkassk. Tr[udy] (USSR) 1955, v. 26, p. 112-119.

A method is proposed for determining the critical loads on systems which does not require the construction, however roughly, of "boundary" surfaces. The solution of a concrete problem, therefore, can be obtained much more quickly than by the method of Kornoukhov. The method, illustrated by way of example, of single span multistage frames can be successfully applied to the solution of the most varied problems provided use is made of graphs showing the critical loads for elementary systems into which a complex structure is divided. Problems relating to the stability of gantry frames, multispan solid columns etc. can be successfully solved.

Zhukov, A. M.
ON POISSON'S RATIO IN THE PLASTIC RANGE (O Koeffitsiente Puassona v Plasticheksoy Oblasti) tr. by S. Reiss. [1959] 12p. 12 refs. CN-68105.
Order from LC or SLA mi$2. 40, ph$3. 30 59-16786

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1954, no. 12, p. 86-91.

If the total strain in a member ε_t is broken into its elastic and plastic components ε_e and ε_p, respectively, the author shows experimentally that the effective Poisson's ratio μ can be presented as $\mu = 1/2(\varepsilon_p + \nu\varepsilon_e)/\varepsilon_t$ where ν is Poisson's ratio in the elastic range. (NASA abstract)

Aerodynamics and Pneumatics

Daetwyler, G.
APPARATUS FOR MEASURING FLOW TURBULENCE. [1959] 7p. 5 refs. R. T. P. Trans. no. 2406.
Order from SLA mi$1. 80, ph$1. 80 59-17727

Trans. of E[idgenoessische] T[echnische] H[oshschule] Zurich. Inst[itut für] Aerodyn amik. Mitt[eilungen] (Switzerland) 1943, no. 8, p. 34-43.

The use of the hot-wire anemometer for flow measurements is discussed.

Kadyrov, S.
MOTION OF A WING OF FINITE SPAN WITH SUPERSONIC VELOCITY. [1959] 8p. 6 refs.
Order from CCT $30. 75 CCT-228TT

Trans. of Akad[emiya] Nauk SSSR. Otd[eleniye] Tekh[nicheskikh] Nauk. Izv[estiya] 1957, no. 8, p. 35-40.

The equation of continuity is given the form

$$\left[(\chi - 1)\left(i_0 - \frac{u^2 + v^2 + w^2}{2}\right) - u^2\right]\frac{\partial u}{\partial x} + \left[(\chi - 1)\left(i_0 - \frac{u^2 + v^2 + w^2}{2}\right) - v^2\right]\frac{\partial v}{\partial y} + \left[(\chi - 1)\left(i_0 - \frac{u^2 + v^2 + w^2}{2}\right) - w^2\right]\frac{\partial w}{\partial z} - uv\left(\frac{\partial u}{\partial y} + \frac{\partial v}{\partial x}\right) - uw\left(\frac{\partial u}{\partial z} + \frac{\partial w}{\partial x}\right) - vw\left(\frac{\partial v}{\partial z} + \frac{\partial w}{\partial y}\right) = 0,$$

where χ is the ratio c_p/c_v; of the specific heats u, v, w are the components of the velocity beyond the shock wave; x, y, z are cartesian coordinates; and i_0 is the initial heat content. Solutions are given for the flow of the gas in the region bounded by (1) the wing surface and the shock wave; (2) the surface of the wing and a

characteristic surface; (3) two characteristic surfaces of different families; and (4) a characteristic surface and the shock wave.

Hydrodynamics, Hydraulics, and Hydrostatics

Fedorov, E. A.
THE MOTION OF A PLATE OF INFINITE SPAN NEAR THE FREE SURFACE OF AN IDEAL IMPONDERABLE FLUID (Dvizheniye Plastinki Beskonechnovo Razmakha Vblizi Svobodnoy Poverkhnosti Ideal'noy Nevesomoy Zhidkosti) tr. by J. K. Friswell. Sep 58 [8]p. Library Trans. no. 764; M. 145.
Order from LC or SLA mi$1.80, ph$1.80 59-18755

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 116, no. 3, p. 373-376.

The solution of the problem of the motion of a plate of infinite span near the free surface of an ideal imponderable fluid is carried out by Kirchoff's method. Flows are examined in which the upper surface of the plate is wetted partially or completely by the fluid stream. The limiting cases at which breakaway of the free streams occurs spontaneously from the leading edge of the plate are also considered. (Royal Aircraft Establishment abstract)

Lambossy, Paul.
FORCED OSCILLATIONS OF AN INCOMPRESSIBLE AND VISCOUS LIQUID IN A RIGID AND HORIZONTAL TUBE. CALCULATION OF THE FORCE OF FRICTION (Oscillations Forcées d'un Liquide Incompressible et Visqueux dans un Tube Rigide et Horizontal. Calcul de la Force de Frottement). [1959] [12]p. 6 refs. No. 192.
Order from SLA mi$2.40, ph$3.30 59-17964

Trans. of Helvetica Physica Acta (Switzerland) 1952, v. 25, no. 4, p. 371-386.

The movement which, under the action of given forces, a viscous liquid makes in a tube is known because one knows at each instant t the velocity of a streamlet of liquid situated at distance r from the axis, given the function v (r, t). The first part of this paper attempts to establish this function, supposing that the pressure applied is a harmonic function of the time. It results from the formula found that the form of the profile of velocities depends, in addition to the time, only on the quantity z defined by $z = R\sqrt{\frac{\rho\omega}{\eta}}$. The most interesting result is that the streamlets of liquid near the wall have a phase advance on the central streamlets. The second part of the paper attempts to establish a formula for the force of friction, i. e., for the reaction of the unit of air of the wall on the column of liquid. This formula

$$F = -\frac{\rho R\omega}{2\alpha} U - \frac{\rho R}{2}\left(\frac{\beta}{\alpha} - 1\right)\frac{dU}{dt}$$

in which α and β are functions of z, and U is the mean velocity in the section, is valid only for the harmonic movement studied. (Author)

Meixner, J.
FLOWS OF FLUID MEDIA WITH INTERNAL TRANSFORMATIONS AND COMPRESSION VISCOSITY (Stromungen von Fluiden Medien mit Inneren Umwandlungen und Druckviskosität). [1959] [12]p. 14 refs. No. 188.
Order from SLA mi$2.40, ph$3.30 59-17940

Trans. of Zeitschrift für Physik (West Germany) 1952, v. 131, no. 4, p. 456-469.

Investigations are presented on how the fundamental equations of hydrodynamics and aerodynamics change when internal transformations (relaxation processes, by which the chemical reactions are also understood) occur in the fluid medium which are rapid as compared with the flow processes. A change occurs only in the compression tensor, because there is added to the shear viscosity a compression viscosity, whose value can be calculated from the data of the internal transformations. It is shown how internal transformations which are not rapid as compared with the movements in the fluid medium, are influenced by other rapid transformations. In particular it is shown how the thermodynamic data of such a system, in which the rapid transformations are reduced away, depend on the data which describe the totality of the transformations. The appearance here of a new type of coefficient alongside the compression viscosity in the reduced equations probably give the first non-trivial example for certain reciprocity relations which were deduced in a general way by Casimir (Rev. Modern Phys. 17: 343, 1945; Philips Research Repts. 1: 185, 1946).

Statics, Kinematics, and Kinetics

Beck, W.
THE KUTZBACH METHOD FOR THE GRAPHICAL ANALYSIS OF NATURAL TORSIONAL OSCILLATIONS, tr. by M. Flint. [1959] 13p. 8 refs. R. T. P. Trans. no. 2397.
Order from SLA mi$2.40, ph$3.30 59-17724

Trans. of MTZ; [Motortechnische Zeitschrift] (Germany) 1943, v. 5, no. 8/9, p. 242-248.

A condensed summary is given of a few fundamental notions of importance for the determination of the natural torsional oscillation frequencies in simple cases together with a short exposition of Kutzbach's graphical method for the determination of the natural oscillation frequency and oscillation form, chiefly for torsional oscillations. The method is then extended to simple cases of branched oscillatory systems. The paper concludes with a few practical comments on the graphical analysis of oscillations. (Author's summary)

Kneser, H. O. and Voelz, K.
CONTRIBUTION TO THE INTERPRETATION OF THE INTERNAL DAMPING OF SOLID BODIES BY THRUST AND COMPRESSION VISCOSITY (Zur Deutung der Inneren Dämpfung Fester Körper durch Schub- und Druckviskosität). [1959] [7]p. 15 refs. No. 231.
Order from SLA mi$1.80, ph$1.80 59-17870

Trans. of Annalen der Physik (East Germany) 1953, 6 Folge, v. 11, no. 4/7, p. 377-382.

Using a few measurement results, it is shown that it is meaningful to introduce a frequency-dependent thrust coefficient and a volume-viscosity coefficient, with whose help one can compare the damping of various forms of vibration with each other. For metals the volume viscosity is possibly zero. (Author)

METALLURGY

AKADEMIYA NAUK SSSR. OTDELENIYE TEKHNICHESKIKH NAUK. IZVESTIYA: METALLURGIYA I TOPLIVO 1959, NO. 1, P. 3-124 (News of the Academy of Sciences of the USSR, Department of Technical Sciences, Metallurgy and Fuel). [1959] 1v. SOV-180-59-1-(1-29)/29.
Order from OTS $1.00, $5.50/6 mo. PB 141 019T-11
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

*METALLOVEDENIYE I TERMICHESKAYA OBRABOTKA METALLOV (USSR) 1959, NO. 5, P. 2-64 (Metallography and Heat Treatment of Metals). [1959] 1v. SOV-129-59-5-(1-17)/17.
Order from OTS $0.60, $3.50/6 mo. PB 141 131T-13
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

*REFERATIVNYY ZHURNAL. METALLURGIYA (USSR) 1957, 1959 (Journal of Abstracts. Metallurgy).
Order from OTS $1.90, $10.00/6 mo.
Foreign $2.15, $11.50/6 mo.

1957, no. 1, PB 141 140T-19
1959, no. 1, p. 1-289, PB 141 140T-17
1959, no. 3, p. 4-337, PB 141 140T-18

Complete translations of those entries which were originally published in the USSR, excluding those periodicals which have been separately abstracted.

SOVIET METAL TECHNOLOGY, 1959, VOL. 2, NOS. 2, 3. A Quarterly Review of Soviet Technical Papers. June-Sep 59, 2 nos.
Order from PS $20.00, $60.00/year

Trans. of selected articles from Stal', Zavodskaya Laboratoriya, Tsvetnyye Metally and Koks i Khimiya.

*ZAVODSKAYA LABORATORIYA (USSR) 1959, V. 25, NO. 5, P. 515-640 (Plant Laboratory). [1959] 1v. SOV-32-25-5-(1-56)/56.
Order from OTS $1.00, $5.50/6 mo. PB 141 027T-19
Foreign $1.25, $7.00/6 mo.

Consists of abstracts in English.

Blaha, F. and Langenecker, B.
INVESTIGATION OF THE PLASTIC BEHAVIOR OF METAL CRYSTALS UNDER ULTRASONIC IRRADIATION. [1959] 10p.
Order from ATS $14.65 ATS-98L32G

Trans. of Acta Met[allurgica] (U. S.) 1959, v. 7, p. 93-100.

Claus, Willi.
A STRIKING CASE OF INVERSE BILLET SEGREGATION. [1959] 4p. (3 figs. 1 table omitted) 18 refs.
Order from SLA mi$1.80, ph$1.80 59-20348

Trans. of Z[ei]ts[chrift] für Metallkunde (Germany) 1936 [v. 28, no. 12] p. 391-393.

Emyashev, A. V.
ON THE TECHNOLOGY OF VACUUM MELTING OF METALS AND ALLOYS; PRACTICAL USE OF VACUUM FURNACE FOR REFRACTORY METALS. [1959] 2800 words.
Order from HB $6.75 HB-4365

Trans. of Russian mono. Primeneniye Vakuuma v Metallurgiy, Moscow, 1958, p. 54-61.

Review of Russian vacuum melting equipment; its drawbacks and how they were eliminated. Data on a 110-lb. furnace for melting steel in high vacuum; design; vacuum system. Operation of furnace: rapid evacuation; maintenance of vacuum during heats. Development of a method for making high-grade melting crucibles directly in furnace. Performance of various refractories such as rammed magnesite; pre-fired alumina and beryllia; technical zirconia; zirconia remelted in an arc furnace. Technique of making crucibles; their appearance when finished and after 43 melts. Temperature measurements in vacuum heats; taking samples: device developed by author; way in which any hanging of the charge in the furnace is avoided. (HB abstract)

Köster, Werner and Lang, Karl.
THE COBALT CORNER OF THE IRON-COBALT-VANADIUM SYSTEM. [1959] 4p. (12 figs. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 59-20232

Trans. of Z[eitschrift] f[ur] Metallkunde (Germany) 1938 [v. 30] no. 9, p. 350-352.

In the Co corner of the system Fe-Co-V, the fusion plane of the gamma mixed crystals and the course of the gamma/epsilon transformation and the position of the Curie temperature are established. In addition, the hardness of the gamma mixed crystal is given. (Author)

Köster, Werner and Dannöhl, Walter.
HARDENING OF GOLD-NICKEL ALLOYS. [1959]
10p. (16 figs. 1 table omitted) 18 refs.
Order from SLA mi$1.80, ph$1.80 59-20234

Trans. of Z[eitschrift] f[ür] Metallkunde (Germany) 1936 [v. 28, no. 9] p. 248-253.

Köster, Werner and Tonn, Willi.
THE SYSTEM IRON-COBALT-TUNGSTEN. [1959]
13p. (39 figs. omitted) 11 refs.
Order from SLA mi$2.40, ph$3.30 59-20229

Trans. of Arch[iv] f[ür] d[as] Eisenhüttenwesen (Germany) 1932, v. 5, no. 8, p. 431-440.

The melts of the ternary system iron-cobalt-tungsten were studied up to the tungsten contents of the section Fe_3W_2-CoW. These two compounds form, in the ternary system, an unbroken series of mixed crystals. On this hypothesis, the equilibrium diagram was derived in the ternary system and confirmed experimentally by means of thermal, dilatometric and structure studies, as well as by means of precipitation hardening. The three-phase equilibrium: melt + tungsten $\rightleftarrows Fe_3W_2$ of the binary system iron-tungsten occurs at a somewhat lower temperature with the addition of cobalt and always goes over into the equilibrium: melt + tungsten $\rightleftarrows$ CoW. The equilibrium melt + alpha-mixed crystals $+Fe_3W_2$ of the iron-tungsten system runs towards a lower temperature, until it enters at 1465° the four-phase reaction: melt + alpha-mixed crystal $\rightleftarrows$ gamma-mixed crystal + delta-mixed crystal, with the three-phase equilibrium: melt + alpha-mixed crystal $\rightleftarrows$ gamma-mixed crystal of the system iron-cobalt, whose temperature decreases with the addition of tungsten. The melt equilibrium which occurs after the reaction, namely, melt + gamma-mixed crystal + delta-mixed crystal is eutectic and, upon passing through a temperature minimum, becomes the equilibrium: melt $\rightleftarrows$ gamma-mixed crystal + CoW of the system cobalt-tungsten, while the three-phase equilibrium of the crystal type: alpha + gamma + delta remains constant down to room temperature. The composition of the alpha- and gamma-mixed crystals involved in the above remains about the same when the temperature falls to about 950° and then shifts towards the cobalt side, corresponding to the course of the alpha-gamma transformation in the system iron-cobalt. (Author)

Krichmar, S. I.
SCALE OF STRUCTURAL ETCHINGS IN THE ELECTROCHEMICAL POLISHING OF METALS. [1959] 7p. 13 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20141

Trans. of [Akademiya Nauk] SSSR. Doklady, 1958, v. 122, no. 3, p. 424-427.

A theoretical investigation of the diffusing anode is presented which considers the over-saturated areas that exist near very small crystalline inclusions. This area results in an increase of the concentration gradient and, consequently, in the current density in these areas. Diffusion in these areas is more intense until the gradient levels off as a result of an increased distance between the anode surface in the area and in the outer effective border of the solution layer. In the case of the formation of solid layers on the anode surface, the substance is transferred through pores, and the presence of a surface area with an increased concentration results in a more intense diffusion of the small crystals. Thus, electropolishing of metals cannot prevent the decrystallization of crystalline formations, the dimensions of which have a considerable effect on the increase of the metal solubility. It is concluded that electrochemical polishing prevents structural etching and smoothing out irregularities of the microrelief only between 10^{-3} and 10^{-5} cm.

Rasworschegg, H.
WASTE HEAT BOILER SYSTEMS AND GAS CLEANING PLANTS DOWN-STREAM OF LD VESSELS AND CONVERTERS. [1959] 3000 words.
Order from HB $7.75 HB-4645

Trans. of Berg- und Hüttenmänn[ische] Monatshefte (Austria) 1959, v. 104, no. 2, p. 31-40.

Report on installation of waste-heat boiler plants downstream of LD oxygen process vessels and bottom-blown converters for complete elimination of brown fumes by wet mechanical methods either alone or combined with wet electrofilters, with scarcely any increase in investment cost of the steelworks. Waste-heat boilers for LD vessels: variation of steam supply during blows. Boiler design. Waste-heat boilers erected in Japan; Germany; Austria; originally to ensure suitably low outlet temperatures for gas cleaning plants and now for providing principal power and heat to entire steelworks. Operating experiences gained. Gas cleaning plants: design of an Austrian installation. Present state of dust precipitation. Waste-heat boilers and gas-cleaning plants for bottom-blown converters. (HB abstract)

Sittard, Johann.
THE PRE-REFINING INSTALLATION OF THE MAXIMILIANSHUTTE A. G. IRON WORKS IN SULZBACH-ROSENBERG. Rept. 612 of the steel manufacturing committee of the Verein Deutscher Eisenhüttnleute. [1959] [27]p. (17 figs. omitted) 32 refs.
Order from SLA mi$2.70, ph$4.80 59-17298

Trans. of unidentified German mono. pub. Düsseldorf [1955].

In order to obtain a uniform composition of the pre-refined Thomas pig iron and a small loss of iron by burning, with high reaction speeds, a simple and inexpensive refining installation was developed in which oxygen is blown onto the bath surface, simultaneously with the filling of the pig iron ladle placed next to the mixer, in such a way that the blowpipe nozzles are elevated as the bath level rises, thus standing always at the same distance from the surface. This installation is distinguished by low investment costs and can be combined with the necessary steel making processes without expenditure of space and time. The blowing of the pre-refined Thomas pig iron in the convertor confirms the advantages which were known in the literature of the subject, and which are also retained when the

pre-refining slag is not drawn off, as has been customary up to the present, but is placed with the burden in the convertor. The pre-refining process here described is adapted to the pre-refining of various pig irons before being made into steel, so that it is not only significant for the Thomas process, but also for the Siemens-Martin and the electric steel plants. (Author)

Sterner-Rainer, R.
MELTING OF ALUMINUM AND ALUMINUM ALLOY SCRAP. [1959] [8]p. (6 refs. 2 tables omitted).
Order from SLA mi$1.80, ph$1.80 59-20336

Trans. of Zeit[schrift] f[ür] Metallk[unde] (Germany) 1930, v. 22, no. 8, p. 269-272.

The alloys produced by the resulting of scrap may be classified as: (a) Al sand-cast alloys with 5 to 7% Zinc and 3 to 4.5% Cu; (b) Al chill-mold casting alloy with 2 to 3.5% Zn, and 6 to 8% Cu; and (c) Al die-casting alloy with a maximum of 2 to 3% Zn, and 6 to 8% Cu. Those classified under a and b should contain 1.2% each of silicon and iron, 0.3% each of Pb and Sn, 0.2% Ni and 0.1% each of Mn and Mg which should not be exceeded and the Al content should be above 87%. These alloys might be manufactured as a variety which permits of somewhat wider tolerances. These alloys when worked and heat treated, can be substituted for the common light metal structural alloys, and they can be easily machined. Secondary Al ingots may be obtained in qualities containing at least 99% and 98% Al. (Author's summary)

Vacek, A.
WASTE HEAT RECOVERY AT THE LD STEELWORKS IN DONAWITZ. [1959] 2900 words.
Order from HB $6.90 HB-4644

Trans. of Berg- und Hüttenmänn[ische] Monatshefte (Austria) 1959, v. 104, no. 2, p. 21-26.

Situation of LD oxygen process when Austrian authorities refuse to permit operations unless the brown fumes were eliminated. Tabular data on preliminary experiments on cleaning the waste gases wet or dry. Progress made with waste heat recovery at Donawitz works (in conjunction with electrostatic dust precipitation). Principle of Lamont boiler used to bring the temperature of the out-going gases from 1800°C to about 300°C. Heat recovery by steam production. How the works' two steam systems, operating at 12 and 50 atms. resp., are fed. Adaptability of systems to prevailing operating conditions. Turbine output related to sequence of LD blows. Advantages offered by steam compressor especially for one-vessel operation. Steam plant. Cost items: dust removal installation; steam equipment. Advance planning for suitable steam systems at steel plants.

Apayev, B. A.
CARBIDE PHASES FORMED ON TEMPERING QUENCHED STEEL. [1959] [9]p. 21 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-18329

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 107, no. 5, p. 685-688.

Data are presented which, together with previous data (59-18346), show that the reaction scheme of carbide formation upon tempering of carbon steels is similar to that presented by L. V. Isaychev (Zhur. Tekh. Fiz. 17: no. 7, 1947). Steel tempered at 200° contains the carbides ϵ-Fe_xC, χ-Fe_xC, and Fe_3C. The quantities of the last two phases are considerably smaller than that of ϵ-Fe_xC, which decomposes at higher temperatures to cementite and χ-carbide. Between 300° and 400° the phase composition rapidly becomes stable; the α-solid solution, which has nearly the same carbon concentration as ferrite, is in balance with the carbides χ-Fe_xC and Fe_3C. χ-Fe_xC decomposes quickly above 400° to cementite.

Gueussier, A. and Castro, R.
RELATIONS BETWEEN BRITTLENESS AT HIGH AND LOW TEMPERATURES IN 18-8 TYPE AUSTENITIC STEELS. [1959].
Order from BISI £8 15s BISITS-1451

Trans. of Rev[ue de] Met[allurgie] (France) 1958 [v. 55] no. 2, p. 107-122.

Konovalov, K. N., Korneva, N. K. and others.
GAS HEATING OF THE SHRINKAGE HEAD OF AN INGOT (Gasovyy Obogrev Pribyl'noy Chasti Slitka). [1959] [14]p. (8 illus. omitted).
Order from LC or SLA mi$2.40, ph$3.30 59-20079

Trans. of Stal' (USSR) 1958 [v. 18] no. 4, p. 311-316.

Use of gas heating of the shrinkage head, employing a torch developed at the Kuznetak Metallurgical Combine, makes it possible to increase the yield of useful steel in the ingot slabs by 5 to 7 per cent by decreasing the size of the hot top which must be cropped from the slab.

Köster, Werner.
THE QUESTION OF NITROGEN IN TECHNICAL IRON. III. PRECIPITATION (SEPARATION) OF N_2 AND C FROM ALPHA-IRON AS AN EXAMPLE OF THE DECOMPOSITION OF A SOLID SOLUTION SUPERSATURATED WITH BOTH COMPONENTS. [1959] 7p. (6 figs. 2 tables omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 59-20228

Trans. of Arch[iv] f[ür] d[as] Eisenhüttenwesen (Germany) 1930 [v.4, no. 3] p. 145-150.

The isothermal precipitating out of the nitrogen in an alpha-iron supersaturated with it at 100° is diminished,

if carbon is simultaneously present in solid solution. The amount of nitrogen precipitated out is lower, the higher the concentration of the carbon dissolved in the alpha-iron. After a certain carbon content it no longer occurs. This content is represented by a limiting curve in the iron-carbon-nitrogen system. The points on this curve are clearly defined condition-points. They indicate that the precipitation of the nitrogen at 100° comes to a standstill independent of the total nitrogen content and remains at a constant value, determined by the rest of the carbon content remaining in solution. The experiment affords an example of the influence upon the precipitating out of a substance resulting from the presence of a second substance in the supersaturated solution, in a manner which could not be predetermined. (Author's summary)

Kreshchanovskiy, N. S. and Demin, M. P.
RESISTANCE OF CAST STEEL TO HOT TEARING AND WAYS OF IMPROVING IT [Treshchinoustoychivost' Litoy Stali i Metody Yeye Povysheniya]. [1959] 4600 words.
Order from HB $9.75 HB-4633

Trans. of Liteynoye Proizvodstvo (USSR) 1958, no. 7, p. 17-21.

Relationship between surface activity of various components of steel and the latter's susceptibility to hot tearing. Effect of sulfur on surface tension of 15% Cr, 25% Ni steel; micro-autoradiograms after slow vs. rapid cooling. Effect of phosphorus; of oxygen; importance of the particular compound in which oxygen is present. Action of hydrogen and nitrogen. Experimental study of effect of alloying elements on hot tearing resistance from viewpoint of their action on harmful surface-active impurities and formation of adsorbed layers on surface of grains. Inoculation of various high-alloy (Cr-W, Cr-Ni, Mn) steels with cerium; boron; titanium; and calcium, and effects observed. Interpretation of mechanism of action of these nucleants. Best way of directing adsorption into right channels and thereby minimizing hot tears. (HB abstract)

Krshizhanovskiy, R. E.
PERFECTING OF A METHOD FOR THE SIMULTANEOUS DETERMINATION OF THE THERMAL AND ELECTRIC CONDUCTIVITY OF STEELS, tr. by D. R. Anderson. 23 Apr 59, 3p. (2 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3613

Trans. of Zavodskaya Laboratoriya (USSR) 1957, v. 23B, p. 925-927.

An apparatus is discussed for measuring the thermal conductivity of steels and alloys at fusion points up to 1000°. The thermal and electric conductivities are determined simultaneously by a study of the temperature distributions and the potential on a specimen as examined by an electrical current.

Romanov, A. A. and Umrikhin, P. V.
IMPROVEMENT OF INGOT STRUCTURE BY VIBRATION OF SOLIDIFYING STEEL. [1959] 3000 words.
Order from HB $7.25 HB-4610

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Metall[urgiya] (USSR) 1958, no. 7, p. 37-43.

Experimental confirmation of theoretical predictions about effect of vibration of steel ingots on their structure. Nature of action of motion on solidification. Description of apparatus: vibration platform originally used. Compositions of rimmed and killed carbon steels, and alloy steels studied. Deformation and viscosity of liquid steel as important factors in vibrating. Vibrational acceleration in relation to gravity for (a) steel; (b) gray iron. Effectiveness of degassing action shown on transformer steel. Possibility of producing a compact sound shell of practically any thickness on ingots. Change in nature of segregation across ingot section. Densification of core zone by vibration, resulting in improved hot workability. Grain refinement; elimination of non-uniformity of crystal structure. Explanation of streaks of segregate in vibrated viscous steel (e. g. 0. 38% C, 1. 50 Cr, 0. 95 Al, 0. 20 Mo). Best vibrating conditions (cycles per minute, and amplitude) for ingots of up to 450 lbs. (HB abstract)

Sigov, A. A.
REDISTRIBUTION OF MOISTURE DURING THE SINTERING OF IRON ORES. [1959] 2600 words.
Order from HB $4.90 HB-4640

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedeniy]. Chern[aya] Met[allurgiya] (USSR) 1958, no. 8, p. 7-12.

Experiments throwing light on the changes in vertical distribution of moisture in sinter beds during sintering, and refuting currently held opinions. Experimental procedure entailing interruption of pot sintering trials after the lapse of various times, and immediate study and recording of bed structure (made up of zones of finished sinter and high temperature; of drying; re-moistening; and grate layer) and taking of samples for moisture content determinations. Mechanism of re-moistening of zone adjacent to grate layer; variation of percentages of water vapor formed by evaporation that are carried off by the gases or condense in the charge during sintering, resp. Vertical temperature distribution in sinter beds as function of moisture content of charge. Evaluation of results of study. (HB abstract)

Tietz, N. and others.
IMPORTANCE AND INFLUENCE OF ELECTROLYTES IN THE EXTRACTION OF CARBIDES FROM STEEL. [1959] 3900 words.
Order from HB $8.90 HB-4560

Trans. of Hutnické Listy (Czechoslovakia) 1957, v. 12, no. 6, p. 517-520.

Classification of suitability of the various electrolytes according to their effect on isolated carbides, into convenient tabular form as a dependable guide in the selection of the best procedures for analysts, using carbide isolation for purposes of production control or solving problems arising from the development of new steels. Quantitative method for electrolytic extraction of carbides from steel. Tests of carbides for stability in various electrolytes at 20°C

and 0°C; composition of carbides tested; testing procedure; composition of electrolytes used in study. Evaluation of test results: Suitability of eight electrolytes for isolation of carbides from unalloyed; low; medium; and high alloy steels; special alloys; cast irons. Effect of current and of electrolyte temperature on results. (HB abstract)

Wiester, H.-J., Vogels, H. A., and Ulmer, H.
NITROGEN AS AN ALLOYING ELEMENT IN MANGANESE VANADIUM STRUCTURAL STEELS FROM THE OPEN HEARTH FURNACE. [1959].
Order from BISI £5 5s BISITS-1431

Trans. of Stahl u[nd] Eisen (West Germany) 1959 [v. 79] 6 Aug, p. 1120-1129.

Forms in which nitrogen is combined and solubility of nitrides in steels with aluminium and vanadium contents as dependent on temperature and heat treatment. Examination of specimens taken from a 1-ton cast from the high frequency induction furnace containing 0.011 to 0.087%Al, 0.018%N and 0.14%V as well as on heavy plates and heavy plate products from 40 open hearth casts containing 0.015% to 0.050%Al, 0.012 to 0.026%N and 0.12 to 0.27%V - other elements corresponding to the chemical composition of St 52-3 steel - regarding the mechanical properties at +20 and 350°C, transition temperature for notch toughness, susceptibility to brittle fracture, weldability, behaviour in transformation and tendency to hardening as dependent on the heat treatment and on the deformation conditions. Effect of the thickness of the products on the test results. (Author's summary).

Light Metals

Cueilleron, Jean and Pascaud, Claude.
OBTAINMENT OF ALUMINUM-TITANIUM ALLOYS BY ALUMINOTHERMY (Obtention d'Alliages Aluminium-Titane par Alumino-thermie). [1959] [3]p. 4 refs. No. 181.
Order from SLA mi$1.80, ph$1.80 59-17943

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1951, v. 233, no. 14, p. 745-747.

A series of aluminum-titanium alloys was prepared in the laboratory by aluminothermic reduction of titanium oxide in the presence of a flux and of a substance capable of furnishing oxygen, or of gaseous oxygen, the latter being applied to the surface of the mixture in the course of the reaction.

Haas, M. and Uno, D.
THE HARDENING PROBLEM OF Be-Al AND Mg-Al ALLOYS. [1959] 4p. (8 figs. omitted) 8 refs.
Order from SLA mi$1.80, ph$1.80 59-20335

Trans. of Z[eitschrift] f[ür] Metallk[unde] (Germany) [1930] v. 22 [no. 8] p. 277-279.

The authors determined a solid solubility of 0.2% Be, and at a eutectic temperature a maximum solubility of 0.8% Be in the aluminum-rich portion of the binary system, in agreement with Kroll. The eutectic is at about 1.4% Be as found by Oesterheld. The aluminum-rich portion of the binary system Al-Mg was checked up dilatometrically, and the equilibrium diagram constructed by Schmidt-Spitaler was substantiated. Dilatometrically, the opinions of Archer and the conclusions of Meissner regarding a solubility limit between 5 and 6% Al were not substantiated at room temperature. (Author)

Nonferrous (except light) Metals

TSVETNYYE METALLY (USSR) 1959 [V. 32] NO. 4, P. 1-95 (Nonferrous Metals). [1959] 1v. SOV-136-59-4-(1-24)/24.
Order from OTS $0.60, $3.50/6 mo. PB 141 139T-16
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

Assmann.
NEW CALCIUM ALLOYS. [1959] [1]p. 3 refs.
Order from SLA mi$1.80, ph$1.80 59-20332

Trans. of Zeitschrift für Metallkunde (Germany) 1931 v. 23 [no. 1] p. 18.

Elsner, G. and Siebe, P.
THE ELECTRICAL CONDUCTIVITY OF COPPER. [1959] [9]p. (6 figs. omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 59-20333

Trans. of Zeitschrift f[ür] Metallkunde (Germany) 1930, v. 22, no. 12, p. 397-401.

Four kinds of copper, differing in purity, were investigated to determine the effect of different thermal and subsequent mechanical treatment upon the conductivity. It was found that the heat treatment of electrolytic copper and refined copper resulted in the establishment of a maximum value for the conductivity within the range of medium temperatures; this range of maximum conductivity becomes smaller with a decrease in the degree of purity of the copper, or, as the case may be, is shifted to the lower temperatures. The fall in the conductivity after reaching the maximum is possibly associated with peculiarities in the structure of the copper. At rather high annealing temperatures the electrical conductivity of electrolytic copper falls, while in the case of refined copper the values increase still more, in some cases very greatly. Cold working generally decreases the electrical conductivity of copper; the differences in electrical conductivity resulting from previous heat treatment may be eliminated to a degree depending upon the purity of the copper, by means of strenuous cold working. In the case of refined copper with a low copper content, the equalizing effect of cold working is retarded, apparently because of the separating out of impurities. An attempt was made to explain contradictions in published articles regarding the location of the maximum value and the order of magnitude of the decrease (in conductivity) on the basis of the experimental results. (Author's summary)

Johansson, C. H. and Linde, J. O.
CRYSTAL STRUCTURE, ELECTRICAL RESISTANCE, THERMOELECTRIC POWER, HEAT CONDUCTIVITY, MAGNETIC SUSCEPTIBILITY. HARDNESS AND "TEMPERING" PHENOMENA OF THE AuPt SYSTEM IN CONNECTION WITH THE PHASE DIAGRAM. [1959] 15p. (17 figs. 7 tables omitted) 29 refs.
Order from SLA mi$2.40, ph$3.30 59-20252

Trans. of Annalen der Physik (Germany) 1930 [5. ser]. v. 5, no. 6, p. 762-792.

The AuPt system was investigated through electrical resistance measurements together with X-ray determinations of the lattice structure in the solid state. The results of these investigations show, in agreement with Doerinckel's phase diagram, but in contrast to Grigorjew's phase diagram, that an uninterrupted series of mixed crystals is present below the solidus curve. However, below about 1150°C, there exists a two-phased field, whose width increases as the temperature decreases. In the case of single-phased alloys which (through quenching) were undercooled to room temperature, the thermo-electric power per degree, the heat conductivity, magnetic susceptibility and hardness were determined in addition to the electric conductivity and lattice structure. The hardness and magnetic susceptibility were determined on alloys which were supersaturated and tempered at low temperatures. Moreover, the tempering phenomena were studied by means of electrical resistance measurements together with X-ray determinations of the lattice structure. Results indicated that at low temperature there occur homogeneous fields of phases with uniform divisions of both types of atoms. These phases which, in this case, on account of the practically equal dispersive power of the gold, or, as the case may be, the platinum atom, cannot be directly (through overstructure lines) identified by X-ray, are located within the two-phase field and therefore are distinguished from those known in the AuCu or, as the case may be, in the PdCu and PtCu systems, by the fact that they are disintegrated into two phases above the field of their existence.

Structural Metallurgy and Corrosion

METHOD OF INCREASING THE CORROSION-INHIBITING ACTION OF NON-GASEOUS HYDROCARBONS (Werkwijze ter Verhoging van de Corrosiewerende Werking van Niet-Gasvormige Koolwaterstoffen). [1959] [4]p. 7 refs. No. 197.
Order from LC or SLA mi$1.80, ph$1.80 59-20077

Trans. of Dutch patent 68, 392, 17 July 51, cl. 23 c 1 heb (23 b 4 heb; 48 d 4) inquiry no. 29 Cur., received 13 June 42, pub. 15 Mar 51, issued 15 Aug 51, dated 17 July 51 (Priority: U. S. A., 18 Feb 41).

The invention refers to a method of increasing the corrosion-inhibiting action of non-gaseous hydrocarbons, as, for instance, gasoline, diesel oil, in solid rust-inhibiting coatings, more particularly lubricating oil and especially turbine oil. In order to obtain such an action there are added, in a manner known in itself (see American patents 2,133,734 and 2,124,628) stable saturated aliphatic (polycarbon) acids, with at least 16 carbon atoms, preferably saturated alkyl succinic acid with at least 20 carbon atoms. In accordance with the invention there is also added simultaneously a small quantity of an alkyl phenol, whereby the corrosion-inhibiting effect is considerably increased. (Extracted from the report)

THE STEAM EXPLOSION METHOD OF SCALE REMOVAL FROM THE SURFACE OF ROLLED METAL. [1959] [1]p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-20080

Trans. of Stal' (USSR) 1958 [v. 18] no. 7, p. 642.

This method, proposed by M. I. Bazhenov-Korchemniy for removing scale from the surface of rolled plate, specifies staggered boring of holes 7 mm deep and 26 mm in diam on the surface of the middle roll of a Lauth three-high rolling mill. The interval between holes must not be less than half their diam. Water from a spray assembly flows into the holes, which may be either round or elongated. At the moment of deformation [reduction] the water is subject to tremendous compression and is transformed to steam instantaneously. The explosion-like ejection of steam as the holes leave their seats of deformation [where they came in contact with the plate or slab] breaks up and blows off the scale and minute scabs not only from the surface of the impression, but from the surrounding areas of the surface of the metal as well. The introduction of the steam explosion method of scale removal on only one plate mill of the Kuznetsk Metallurgical Combine resulted in a savings of close to 1,200,000 to 1,300,000 rubles per year [roughly $300,000 at the official rate of exchange: about $100,000 to $200,000 at the real rate of exchange.] (Extracted from the report)

Brenner, P.
PLATING WITH VERY PURE ALUMINUM (AL 99.99%). [1959] [4]p. (1 fig. footnotes omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15107

Trans. of Jahrbuch [der] Deut[schen] Luftfahrtforschung (Germany) 1938, sec. 1, p. 515-516.

Krupkowski, A. and Balicki, M.
THE RECRYSTALLIZATION OF COLD-WORKED METALS. [1959] 10p. (13 figs. 3 illus. omitted) 12 refs.
Order from SLA mi$1.80, ph$1.80 59-20230

Trans. of Revue de Metallurgie (France) 1939 [v. 36] Jan, p. 21-29.

Three proofs are furnished which establish unquestionably that cold-worked metal is, in its phase of partial recrystallization, a mixture of two single components one of which is the cold-hardened metal and the second, the annealed metal. In the course of recrystallization the annealed metal increases at the expense of the cold-worked metal. There is but a single zone of temperature where all the properties of cold-worked metals change in value, returning to the level corresponding to the state of the annealed metal. The term "recrys-

tallization" is given to this zone of change. The first recrystallized crystals are poorly distinguished and too minute to be detectable by any optical or X-ray method. Following this recrystallization, there is a development of the grains which may be observed optically or in the spectrograms. The term "grain growth" corresponds best to this phase.

Maass, E.
TESTS FOR THE DETERMINATION OF CORROSION OF Al AND Al ALLOYS. [1959] 7p. [figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-20334

Trans. of Z[eitschrift] f[ür] Metallkunde (Germany) 1930 [v. 22, no. 8] p. 280-283.

Mikhaylovskiy, Yu. N. and Tomashov, N. D.
A METHOD FOR ELECTROCHEMICAL INVESTIGATION OF ATMOSPHERIC CORROSION AT 100% OR LOWER RELATIVE HUMIDITY OF THE AIR (Metod Elektrokhimicheskogo Issledovaniya Atmosfernoy Korrozii pri Otnositel'noy Vlazhnosti Vozdukha ot 100% i Nizhe). [1959] 5p.
Order from ATS $10.05 ATS-21L33R

Trans. of Zavodskaya Lab[oratiya] (USSR) 1957, v. 23, no. 12, p. 1462-1466.

Reiner, Stefan.
CORROSION OF LEAD BY STRAY CURRENTS. [1959] 3p. (1 fig. 1 table omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 59-20344

Trans. of Z[ei]ts[chrift] f[ür] Metallkunde (Germany) 1937 [v. 29, no. 10] p. 353-354.

Pb is attacked more or less strongly by the action of stray currents in the presence of aqueous electrolytes. A protective coating on the lead is not complete insurance against attack. In the absence of stray currents, only lead without the protective coatings is attacked however, not to such a great extent as when stray currents are present. Bituminous or tar coatings are sufficient protection (in the absence of stray currents). (Author)

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

*ATOMNAYA ENERGIYA (USSR) 1958, 1959 (Atomic Energy).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

1958, v. 5, no. 3, p. 217-387, PB 141 082T-19
1959, v. 6, no. 4, p. 369-503, PB 141 082T-16
1959, v. 6, no. 5, p. 509-608, PB 141 082T-18

Consists of abstracts in English.

SOVIET HEAVY WATER NUCLEAR RESEARCH REACTOR OF THE ACADEMY OF SCIENCES (TECHNICAL DATA). 31 July 59 [6]p. 6 refs. AF 1255975.
Order from LC or SLA mi$1.80, ph$1.80 59-19718

Trans. from Soviet open sources, 1955-1958.

THE SOVIET JOURNAL OF ATOMIC ENERGY, 1958, VOL. 5.
Order from CB $20.00, $75.00/year

No. 2, p. 933-1076
No. 3, p. 1077-1284

Trans. of Atomnaya Energiya (USSR) 1958, v. 5, no. 2, p. 105-[212]; no. 3, p. 217-[387]

SOVIET LIGHT WATER NUCLEAR RESEARCH REACTOR (TECHNICAL DATA). 13 Aug 59 [7]p. (6 figs. omitted) 4 refs. AF 1255996.
Order from LC or SLA mi$1.80, ph$1.80 59-19715

Trans. from Soviet open sources, 1955-1957.

Antonov, A. V., Korshunov, Yu. V. and others.
STABILIZATION OF HIGH-FREQUENCY VOLTAGE ON THE CYCLOTRON DEE (Stabilizatsiya Napryazheniya Vysokoy Chastoty na Duante Tsiklotrona) tr. by Lydia Venters. Feb 59, 11p. 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3651

Trans. of *Pribory i Tekhnika Eksperimenta (USSR) 1958, no. 1, p. 41-46.

A stabilizer of the amplitude of high-frequency voltage on the extraction dee of a cyclotron is described which was put in operation and investigated on an operating unit. The introduction of the stabilizer essentially increased the stability of the current of accelerated ions on the remote target of the cyclotron. Results indicate that the stability of the system, (and consequently the error of the regulation) is determined by the Q-factor of the cyclotron circuit.

Lindner, R. and Matzke, H. J.
SOME EXPERIMENTS ON THE DIFFUSION OF Xe^{-133} OUT OF URANIUM OXIDES. [1959] 3p.
Order from ATS $5.45 ATS-08L33G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1958, v. 13a, p. 794-796.

Elementary Particles

"BETA" RADIOACTIVITY PRODUCED BY BOMBARDMENT WITH NEUTRONS: III. tr. by J. C. Levy. 30 Dec 58, 4p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-12933

Trans. of La Ricerca Scientifica [ed il Progresso Technica nell'Economia Nazionale] (Italy) 1934, v. 1, no. 8, p. 452-453.

A magnetic device was constructed for the purpose of determining the sign of the emitted particles similar to that described by J. Thibaud (Compt. rend. 197: 447, 1933). From the intensity of the effect a study was able to be made of the following elements: Al; Si; P; S; Ga; Cr; Fe; Ag; Br; I. In all cases only negative electrons were observed. (Extracted from the report)

Burshteyn, Ye. L., Veksler, V. I., and Kolomenskiy, A. A.
A STOCHASTIC METHOD OF ACCELERATING PARTICLES, tr. by J. B. Sykes. 14 Oct 55 [6]p. 3 refs. A. E. R. E. Lib/Trans. 623.
Order from SLA mi$1.80, ph$1.80 59-17539

Trans. of mono. Some Problems in the Theory of Cyclical Accelerators, Moscow, 1955, p. 3-6.

The fundamental feature of this method, which was proposed by the authors in 1948 (unpublished report of the USSR Academy of Sciences), is that the mechanism of acceleration is one of probability, and not one of resonance, induction, or the like. The expression for the total probability, W_k, of a particle of charge q attaining a given energy, $E_k = kqV_o$, after passing k times through accelerating gaps charged with an electric voltage that alternates between $+V_o$ and $-V_o$ is $W_k = \frac{1}{2^k} = 1/2 \frac{qV_o}{E_k}$.
It is suggested that stochastic acceleration plays a significant role in the accumulation of energy of cosmic particles.

Nuclear Reactions

SCIENTIFIC AND RESEARCH INSTITUTIONS IN BULGARIA. I. NUCLEAR SCIENCE. 17 Apr 59 [11]p. (8 figs. omitted) 21 refs. AF 1255706.
Order from LC or SLA mi$2.40, ph$3.30 59-16445

Trans. from open sources pub. in Bulgaria, East and West Germany, France, the USA and Yugoslavia, 1951-1958.

SCIENTIFIC AND RESEARCH INSTITUTIONS IN HUNGARY. I. NUCLEAR SCIENCE. 22 May 59 [23]p. (7 figs. omitted) 24 refs. AF 1255828.
Order from LC or SLA mi$2.70, ph$4.80 59-16639

Trans. from open sources pub. in Hungary, England, East and West Germany and by the United Nations, 1957-1959.

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

Turri, Albino.
THE 'TURRI 43' PARACHUTE, tr. by L. Fusier. [1959] 2p. R. T. P. Trans. no. 2548.
Order from SLA mi$1.80, ph$1.80 59-17684

Trans. of unidentified mono. pub. Figliaro, 26 July, 1945.

PHYSICS

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA FIZICHESKAYA, 1959, V. 23, NO. 5, P. 538-668 (News of the Academy of Sciences of the USSR, Physics Series). [1959] 1v. SOV-48-23-5-(1-31)/31.
Order from OTS $0.80, $4.50/6 mo. PB 141 041T-16
Foreign $1.05, $6.00/6 mo.

Consists of abstracts in English.

BULLETIN OF THE ACADEMY OF SCIENCES OF THE USSR. PHYSICAL SERIES, 1958, VOL. 22, NO. 8, P. 889-1002. 1958, 1v.
Order from CTT $20.00, $215.00/year

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1958, v. 22, no. 8, p. 895-[997].

*ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI (USSR) 1959 (Journal of Experimental and Theoretical Physics).
Order from OTS $1.40, $7.50/6 mo.
Foreign $1.65, $9.00/6 mo.

No. 4, p. 969-1336, PB 141 052T-15
No. 5, p. 1337-1616, PB 141 052T-16

Consists of abstracts in English.

Troytskiy, V. N.
THE EFFECT OF THE FORM OF THE STRUCTURAL FUNCTION OF HETEROGENEITIES OF THE DIELECTRIC CONSTANT OF THE AIR ON THE REMOTE TROPOSPHERIC PROPAGATION OF ULTRA-SHORT WAVES. [1959] [4]p. 6 refs. M. 166.
Order from LC or SLA mi$1.80, ph$1.80 59-18773

Trans. of *Radiotekhnika i Elektronika (USSR) 1957, v. 2, no. 1, p. 34-37.

Expressions are obtained for the median value of field intensity and the potential transmission zone in a case of remote tropospheric propagation of ultrashort waves for the structural function of heterogeneities ε of the form $(\varepsilon_1-\varepsilon_2)^2 = B\alpha$. The influence of the form of the structural function on the value of field intensity and the value of distortions is analysed. It is shown that the form of the structural function has a slight effect on the value of field intensity and a marked effect on the value of distortions. (Author)

Electricity and Magnetism

Malow, N. N.
ELECTROMAGNETIC WAVES IN A HOLLOW CONDUCTOR WITH VARIABLE CROSS-SECTION (Elektromagnetische Wellen in einem Hohlleiter mit Veränderlichem Schnitte). [1959] [12]p. 2 refs. (foreign text included).
Order from SLA mi$2.40, ph$3.30 59-15210

Trans. of Journal of Physics (USSR) 1941, v. 4, no. 5, p. 473-478.

In this article, it is our intention to demonstrate that the concentration of energy is possible in a hollow conductor with variable cross-section; for this purpose, the feeding device is constituted by a broad conductor cross-section. The narrow slit which represents the antenna, must be located in a narrow cross-section of the conductor. (Extracted from the report)

Vonsovskiy, S. V. and Salikhov, S. G.
PARAMAGNETIC RELAXATION IN METALS, tr. by R. C. Murray. 1955 [6]p. 6 refs. A. E. R. E. Lib/Trans. 643.
Order from SLA mi$1.80, ph$1.80 59-17553

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 96, no. 4, p. 717-719.

Ferromagnetic-free powdered metals (Cr, V, Sb, Pb, Os, Ir, Al, Zn, Si, Na, W, Cu, Mn, As, Mo, Bi, Te, Sn, Rh, or Ru) with linear dimensions of 10^{-4} to 10^{-5} cm were tightly packed into small celluloid cylinders which were then filled with wax and placed in an oscillator circuit where the electric field was least. A strong constant magnetic field, $H_{\parallel}$, whose intensity could be varied at will, was applied in parallel with an alternating field, $H_{\sim} = H_0 \exp(i\omega t)$, of various frequencies (5.46×10^8, 2×10^8, 7.5×10^7, and 7.5×10^6 c) at 290°K. The variation in paramagnetic absorption (W_O) with the intensity of $H_{\parallel}$, for a given $H_{\sim}$, was observed. The metals could be divided into 3 groups on the basis of their paramagnetic relaxation. With the first group (which included Cr, V, Sb, Pb, Os, Ir, Al, Zn, Si, and Na) the maximum W_O occurred at $H_{//}=0$ oer, then W_O fell sharply with an increase of $H_{//}$. These metals did not exhibit relaxation absorption at 7.5×10^6 c. When the frequency was changed from 7.5×10^7 to 5.46×10^8 c, the curves for Si, Pb, V, Al, and Zn widened, the curves of Cr and Sb remained practically the same, and the curve for Na contracted. With metals of the second group (W, Cu, Mn, As, Mo, Bi, Te, and Sn) the relaxation curves at 7.5×10^7 c also dropped sharply and had shapes similar to the curves of the first group; at 5.46×10^8 c, however, W_O first dropped sharply to a minimum at about $H_{\parallel}=2100$ oer, then it rose to a maximum at about $H_{\parallel}=6000$ oer. The curves for the third group of metals (Rh and Ru) showed no absorption at $H_{\parallel}=0$, then the absorption gradually rose to a maximum at about $H_{//}=6000$ oer. No absorption was seen at the lower frequencies. These results suggest relaxation times of about 10^{-8} and 10^{-9} sec, which correspond respectively with the falling and rising branches of the curves of W_O vs $H_{//}$.

Molecular Physics and Spectroscopy

OPTICS AND SPECTROSCOPY, 1959, VOL. 6, NO. 2, P. 85-178. [1959] 1v.
Order from AIP with Journal of the Optical Society of America, $25.00/year, Foreign $28.00/year

Trans. of Optika i Spektroskopiya (USSR) 1959, v. 6, no. 2, p. 129-[272].

Kocher, Heinz.
DATING BY THE RUBIDIUM-STRONTIUM METHOD USING SPECTROSCOPIC ANALYSIS WITH A VOLTA LUMINESCENCE LIGHT SOURCE. [1959] 8p.
Order from ATS $13.25 ATS-97L32G

Trans. of Z[eitschrift für] Angew[andte] Phys[ik] (West Germany) 1958, v. 10, no. 3, p. 150-155.

Nikitin, V. N., Rakova, G. V., and Mikhaylova, N. V.
INFRARED ABSORPTION SPECTRA OF ETHYLLITHIUM DISSOLVED IN BENZENE, HEXANE AND DIETHYL ETHER [Ob Infrakrasnykh Spektrakh Pogloshcheniya Etillitiya, Rastvorennogo v Benzole, Geksane i Dietilovom Efire]. [1959] 4p.
Order from ATS $5.50 ATS-77L33R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 124, no. 4, p. 873-875.

Optics

Distler, G. I.
INFRA-RED POLARISATION FILTERS. [1959] [2]p. 1 ref. M. 160.
Order from LC or SLA mi$1.80, ph$1.80 59-18768

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 5, no. 2, p. 219.

New specimens of infra-red polaroids are announced (but not described) which polarize radiation from 0.75μ to about 3μ.

Teichmann, Horst.
A NEW PHOTOELECTRIC PHOTOMETER. [1959] 1p. (1 fig omitted).
Order from SLA mi$1.80, ph$1.80 59-20249

Trans. of die Naturwissenschaften (Germany) 1930, [v. 18] no. 41, p. 867.

Solid State Physics

Amelinckx, Severin, Grosjean, Carl C., and Dekeyser, Willy.
SPIRALS OF GROWTH ON CRYSTALS OF GOLD OBTAINED BY PRECIPITATION (Spirales de Croissance sur des Cristaux d'Or Obtenus par Precipitation). [1959] [4]p. 7 refs. No. 182.
Order from SLA mi$1.80, ph$1.80 59-20036

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1952, v. 234, no. 1, p. 113-115.

We have been able to observe, as the photograph shows spirals of growth on the faces (111) of crystals of gold. These spirals hava a triangular form; the relatively good visibility of these figures of growth has caused us to suppose that the Burgers vector has to be a relatively large multiple of the link unit. The very small dimensions of the crystals (10 to 30μ) has not allowed us to measure this vector by interferometry. (Extracted from the report)

Avak'yants, G. M.
ON THE LETTER TO THE EDITOR BY I. M. TSIDIL'KOVSKI AND F. G. BASS. (O Pisme v Redaktsyu I. M. Tsidil'kovskogo i F. G. Bassa) tr. by Mrs. H. Wareing. 11 Sep 57 [3]p. (3 equations refs. omitted) M-V. Trans. no. 2354; M. 58.
Order from LC or SLA mi$1.80, ph$1.80 59-18681

Trans. of *Zhurnal Eksper[imental'noy i] Teor[eticheskoy] Fiz[iki] (USSR) 1956, v. 30, no. 4, p. 806.

A reply is presented to a criticism by I. M. Tsidil'kovski and F. G. Bass of two previous papers (Zhur. Eksptl. i Teoret. Fiz. 26: 562-575 and 668-679, 1954) concerning the theory of equations of transfer in strong electric fields. The two criticized papers are available in translation as 59-18679 and 59-18670, respectively.

Avak'yants, G. M.
ON THE THEORY OF EQUATIONS OF TRANSFER IN STRONG ELECTRIC FIELDS I (K Teorii Uravenii Perenosa v Silnikh Elektricheskikh Polyakh I) tr. by Mrs. H. Wareing. 11 Sep 57 [13]p. (illus. refs. equations omitted) M-V. Trans. no. 2351, M. 56.
Order from LC or SLA mi$2.40, ph$3.30 59-18679

Trans. of Zhurnal Eksper[imental'noy i] Teor[eticheskoy] Fiz[iki] (USSR) 1954, v. 26, no. 5, p. 562-575.

The transfer of heat and electricity in semiconductors is investigated for the conditions when electron ('hole') gas of the semiconductor is considerably heated in an electric field, associated with the passing of current through the semiconductor. Since basic equations and the formulae derived therefrom for thermo-electric and galvano-magnetic effects are omitted from the present translation, access to the Russian text is necessary. (See also 59-18680, 59-18681)

Avak'yants, G. M.
ON THE THEORY OF EQUATIONS OF TRANSFER IN STRONG ELECTRIC FIELDS II (K Teorii Uravenii Perenosa v Silnikh Elektricheskikh Polyakh II) tr. by Mrs. H. Wareing. 11 Sep 57 [14]p. (illus. equations omitted) M-V Trans. no. 2353, M. 57.
Order from LC or SLA mi$2.40, ph$3.30 59-18680

Trans. of Zhurnal Eksper[imental'noy i] Teor[eticheskoy] Fiz[iki] (USSR) 1954, v. 26, no. 6, p. 668-679.

The coefficients in formulae (which are omitted in this translation) describing phenomena of heat and electricity transfer in semiconductors in the case of intensive heating of electron (hole) gas are shown to be functions of current density j and charge carriers concentration N. All coefficients are shown to be even functions of j, and only three powers of current are met with: j^0, j^2 and j^4. They are also shown to be even functions relative to N if we ignore the dependence on N in terms containing expressions of the type $(\partial/\partial T)(\chi^{\nu}, \ln N)$. With this only three powers of concentration are met with: N^0, N^1 and N4. The power of the current j or concentration N, occurring in formulae for the coefficients listed above, does not depend on the power of the impulse n in the formula for the dependence of the length of free path on impulse: $l = l_n p^n$. (See also 59-18679, 59-18681)

Buttler, W. M.
BOUNDARY LAYER NOISE IN SEMICONDUCTORS (Über das Randschichtrauschen in Halbleitern). [1959] [8]p. 12 refs. No. 229.
Order from SLA mi$1.80, ph$1.80 59-17931

Trans. of Annalen der Physik (East Germany) 1953, 6 Folge, v. 11, no. 4-7, p. 362-367.

With the help of the Gisolf theory (Physica 15: 825, 1949) of shot noise and the Schottky boundary layer theory (Z. Physik 118: 539, 1942) there is derived by an approximation to the mean via the square of the field intensity a formula which, based on the Gisolf mechanism, describes the noise in the boundary layer and in the interior of the semiconductor in a uniform manner. (Author) (See also 59-17930)

Buttler, W. M.
THE BOUNDARY LAYER NOISE OF CdS MONOCRYSTALS (Über das Randschichtrauschen von CdS-Einkristallen). [1959] [8]p. 9 refs. No. 230.
Order from SLA mi$1.80, ph$1.80 59-17930

Trans. of Annalen der Physik (East Germany) 1953, 6 Folge, v. 11, no. 4-7, p. 368-376.

A new theory of boundary layer noise, which was developed on the basis of the Schottky boundary layer theory (Z. Physik 118: 539, 1942) and the Gisolf theory (Physica 15: 825, 1949) of shot noise in semiconductors, was tested experimentally on CdS with reference to the voltage dependency of the noise current, and proof was furnished that in the case of CdS the noise originates preferredly in the boundary layer. (Author) (See also 59-17931)

Chatelet, Joseph.
THE ACTION OF TEMPERATURE ON THE ANELASTIC PROPERTIES OF SODIUM CHLORIDE (L'Action de la Température sur les Propriétés Anélastiques du Chlorure de Sodium). [1959] [4]p. 5 refs. No. 183.
Order from SLA mi$1. 80, ph$1. 80 59-20035

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1952, v. 234, no. 3, p. 347-349.

The measurement of the modulus of elasticity E and of the internal friction δ of a crystal of sodium chloride between 15 and 200°C shows various anelastic phenomena: the relaxation by thermic currents and the creation of internal tensions, visible above all in the value of E; the substructure and the movement of dislocations, principal causes of δ ; phenomena in the scale of gaps, creating maximums of δ and without effect on E. (Author)

Glazov, V. M., Mirgalovskaya, M. S., and Petrakova, L. A.
NEW SEMI-CONDUCTOR MATERIALS HAVING THE STRUCTURE OF CHALCOPYRITE (Novyye Poluprovodnikovyye Materialy so Strukturoy Khalkopirita) tr. by H. Harper. Sep 58 [8]p. 2 refs. Library Trans. no. 772; M. 144.
Order from LC or SLA mi$1. 80, ph$1. 80 59-18754

Trans. of Akademiya Nauk [SSSR.] Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1957, no. 10, p. 68-70.

Following upon the work of Hahn et al. (Z. anorg. u. allgem. Chem. 271: 135-70, 1957), twelve compounds were synthesized and shown to have a structure analogous to chalcopyrite. Curves are given of dependence of electrical conductivity on temperature and results of measurements of lattice parameters are tabulated. (RAE abstract)

Gorbunova, K. M. and Dankov, P. D.
THE CRYSTAL CHEMISTRY AND DIFFUSION MECHANISM OF ELECTROLYTIC CRYSTALLIZATION. [1959] 13p. 10 refs.
Order from CCT $47. 25 CCT-234TT

Trans. of [Zhurnal Fizicheskoy Khimii] (USSR) 1949 [v. 23] no. 5, p. 616-624.

Previous observations of K. M. Gorbunova and A. I. Zhukova (Zhur. Fiz. Khim. 23: , 1949) that the ratio of the current strength (I) in the cell circuit to the cross-sectional area (S) does not remain constant in the region of low I, for which the corresponding S's are small, are shown to be in accordance with the point of view previously developed (Colloid Electrochemical Institute report at the General Meeting of Chemical Science Sections of the USSR Academy of Sciences, Nov. 1946) concerning the part played by the size of the diffusion current of the metal ions in determining and controlling the electrolytic growth of the crystal. The factor which leads to dendrite formation is the possibility of three-dimensional separation of ion consumption during the electrolytic crystallization. (See also 59-16971)

Grund, Alfred and Brenet, Jean.
STUDIES OF CRYSTALLINE TRANSFORMATIONS OF A SINGLE CRYSTAL OF PYROLUSITE AT THE TIME OF THE INCREASE OF CATALYTICAL AND DEPOLARIZING PROPERTIES (Études des Transformations Cristallines d'un Cristal Unique de Pyrolusite lors de l'Accroisement des Propriétés Catalytiques et Dépolarisantes). [1959] [3]p. 1 ref. No. 184.
Order from SLA mi$1. 80, ph$1. 80 59-20039

Trans. of Academie des Sciences [Paris]. Comptes Rendus (France) 1952, v. 234, no. 3, p. 345-347.

By means of the turning crystal and the Weissenberg method it has been possible to demonstrate the evolution of the structure of a single crystal of pyrolusite at the time of a treatment designed to increase its depolarizing and catalytical properties. The structure evolves toward that of cryptomelane, with the appearance of a fiber axis, with the existence of a manganite of manganese, orientated, and of a specific polycrystalline phase with crystallites distributed at random. (Author)

Gubanov, A. I.
THE THEORY OF STRONG FIELD EFFECT IN SEMI-CONDUCTORS (K Teorii Effekta Sil'nogo Polya v Poluprovodnikakh). 30 Oct 56 [14]p. (35 illus. 26 refs. omitted) M-V. Trans. no. 2249; M. 21.
Order from LC or SLA mi$2. 40, ph$3. 30 59-18644

Trans. of Zhurnal Tekhnicheskoy Fiziki (USSR) 1954, v. 24, no. 2, p. 308-319.

Topics discussed include (1) experimental data concerning strong field effect. Possible mechanisms of strong field effects (2) generalization of the theory of thermoelectronic ionization, (3) the theory of collision ionization and the general mechanism of the phenomenon, and (4) calculation of the image-forces in the theory of solid rectifiers.

Guinier, A. and Tennevin, J.
TWO VARIANTS OF THE LAUE METHOD AND THEIR APPLICATIONS (Sur Deux Variantes de la Méthode de Laue et Leurs Applications). [1959] [9]p. (10 figs. refs. omitted) No. 258.
Order from SLA mi$1. 80, ph$1. 80 59-17909

Trans. of Acta Crystallographica (Denmark) 1949, v. 2 [no. 3] p. 133-138.

A geometrical property of white X-radiation diverging from a point source and reflected in a given family of crystal planes makes it possible to obtain photographs from which the scatter of the normals to these planes may be determined with an accuracy of 10 seconds of arc, even in a relatively large crystal. In this way the degree of perfection of certain crystals has been assessed and a new type of imperfection has been discovered. An alternative experimental arrangement gives an image of the crystal from which its position and orientation and the position of a region of imperfection can be determined. (Author)

Osipov, K. A.
ON THE ENERGY OF THE FORMATION OF VACANT SPACES IN SOLID METALS. [1959] 5p. 22 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20136

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 121, no. 5, p. 855-857.
Another translation is available from LC or SLA mi$1.80, ph$1.80 as AEC-tr-3464, 1958, 5p.

Values of q, the energy of activation of the formation of thermodynamically unstable areas in hard metal crystals, are tabulated for Al, Cu, Ag, Au, and Pt. These values were calculated from the previously obtained (59-16109 or 59-16122) equation

$$q = -T_S \left\{ [(H_{T_S} - H_{298^\circ})/(T_S - 298^\circ) - (6.7 - \ln T_S) - S_{298^\circ} \right\},$$

where T_S is the melting point, $H_{T_S} - H_{298^\circ}$ is the difference in the heat content values (per gram atom) of a solid metal at a melting temperature and at a standard temperature of 298.16°K, and S_{298° is the entropy (per gram atom) at standard temperature. These values of q are in good agreement with earlier values of E_0, the energy of the formation of vacant spaces. The idea of limited and temporary activation energy values of different processes indicates that for borderline (bl) autodiffusion, $\Delta H_{bl} = nq$ for materials without polymorphous transformation, and possibly $\Delta H_{bl} = nq_{\alpha,\beta}$ for metals with polymorphous transformation. In these correlations, n is not less than 1 and depends on the disorientation angles of contracting granules, and the q and $q_{\alpha,\beta}$ values are not affected by the disorientation angle. (See also 59-10803, 59-20135)

Samoylovich, A. G. and Klinger, M. I.
ON THE THEORY OF SEMI-CONDUCTORS WITH AN IMPURITY BAND (K Teorii Poluprovodnikoy s Primesnoy Zonoy). 30 Aug 56 [18]p. (4 figs. 9 equations refs. omitted) M-V. Trans. no. 2235; M. 22.
Order from LC or SLA mi$2.40, ph$3.30 59-18645

Trans. of Zhurnal Tekhnicheskoy Fiziki (USSR) 1955, v. 25, no. 12, p. 2050-2060.

Topics include (1) calculation of the chemical potential of an electron gas in a metal with a narrow band, (2) calculation of electrical conductivity, (3) calculation of the differential thermo emf, (4) the chemical potential of a semi-conductor with a narrow impurity band, (5) the electrical conductivity of a semi-conductor with an impurity band, and (6) the thermo emf of a semi-conductor with a narrow impurity band.

Savintsev, P. A. and Avericheva, B. Ye.
THE MELTING TEMPERATURE OF THE CONTACT LAYER BETWEEN CRYSTALS. [1959] 3p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-20140

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 5, p. 936-937.

Polycrystallized alkali-halide crystals were brought into contact and heated in a crucible furnace. The formation of a liquid was noted at a temperature below the melting point of the individual crystals. Contact melting takes place not only in eutectic systems but also in systems of alkali-halide crystals able to form solid solutions. When test samples preheated to a temperature of contact melting were brought into contact melting was noted only at the moment of the contact of the samples. It is concluded that preliminary diffusion does not show any considerable effect on the contact melting temperature. X-ray investigations showed that solid solutions as well as eutectic structures form as a result of contact melting.

Schrader, B., Nerdel, F., and Kresze, G.
METHOD OF TAKING RAMAN SPECTRA OF SOLIDS AS COMPRESSED BLANKS. [1959] 5p.
Order from ATS $8.85 ATS-44L33G

Trans. of Z[eitschrift fur] Physik[alische] Chem[ie] Frankfurt (West Germany) 1957 [Neue Folge] v. 12, p. 132-138.

Semiletov, S. A. and Pinsker, Z. G.
ELECTRONOGRAPHIC INVESTIGATION OF THE DEGREE OF PERFECTION OF SINGLE GERMANIUM CRYSTALS (Elektronograficheskoye Issledovaniye Stepeni Sovershenstva Monokristallov Germaniya). 29 Nov 57 [7]p. (7 figs. omitted) M-V. Trans. no. 2388; M. 3.
Order from LC or SLA mi$1.80, ph$1.80 59-18626

Trans. of Kristallografiya [Moscow] (USSR) 1956, v. 1, p. 209-213.

On the electron diffraction patterns from sawed specimens, as a rule, spot reflections were observed (with a strong background) sometimes accompanied by weak and short Kikuchi lines. Such photographs indicate that in sawing of germanium, in the layer that comes into contact with the saw, separate and fairly large blocks are formed ($>10^{-5}$ cm), turned in relation to one another and in relation to the initial single crystal. On photographs of polished specimens together with spot reflections there were Debye half-rings, testifying to the presence on the polished surface of polycrystalline dust. In this way, during polishing of germanium, together with the formation of a mosaic structure, extraction from the surface of the crystal of minute ($\sim 10^{-6}$ cm) crystals takes place. After brief etching ($\sim$15 sec) of the polished specimen, only spot reflections are observed on the electron diffraction pattern, forming a two-dimensional network or grouped along straight lines. The presence on the electron diffraction pattern of reflections up to the VI order from the face (111) corresponds, in agreement with the Bragg-Wolf formula, to a disorder of the blocks $\sim 1 - 3^\circ$ ($\lambda = 0.05$ A, $d_{111} = 3.25$ A).

Shabanskiy, V. P.
KINETIC EQUATION FOR ELECTRONS IN METALS IN STRONG FIELDS (Kineticheskoye Uravnaniye dlya Elektronov v Metallakh v Sil'nikh Polyakh) tr. by Mrs. H. Wareing. 24 Sep 57 [6]p. (19 illus. omitted) M-V. Trans. no. 2360; M. 60.
Order from LC or SLA mi$1.80, ph$1.80 59-18683

Trans. of Zh[urnal] Eksper[imental'noy i] Teor[eticheskoy] Fiz[iki] (USSR) 1954, v. 27, no. 2(8), p. 142-146.

An expansion of the collision integral with respect to the small parameter $\Delta p/p$, where Δp is the change with respect to absolute value of electron momentum p during the collision of the lattice, is used to derive an approximate system of kinetic equations for electrons in metals, suitable for any fields. However, since all mathematical expressions are omitted from the present translation, the reader will need access to the original Russian paper.

Vol'kenshteyn, F. F.
ON THE CHARGING OF A SEMICONDUCTOR SURFACE DURING ADSORPTION. [1959] 12p. 21 refs.
Order from MDF $6.00 MDF V-135

Trans. of Zh[urnal] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32, no. 10, p. 2383-2391.

The answer to the question of whether given molecules adsorbed on the surface of a semiconductor perform acceptor or donor function (i.e., do they cause negative or positive charging of the surface) is shown to be determined not only by the nature of these molecules (nature of the adsorptive), as is usually considered and as is assumed throughout the work on Randschichttheorie, but also by the character of their bonding to the surface, which is determined by the nature of both components partticipating in the bonding (adsorbate and adsorbent). The relative content of the different kinds of chemisorption and, in addition, the sign and absolute value of the resultant electrical charge lumped on the surface is determined, other conditions being equal, by the position of the level of the chemical potential on the crystal surface. (See also 59-12346, 59-13535, 59-14805)

Welker, H.
ON NEW SEMI-CONDUCTING COMPOUNDS (Uber neue Halbleitende Verbindungen). [1959] [8]p. 10 refs. No. 220.
Order from SLA mi$1.80, ph$1.80 59-17960

Trans. of Zeitschrift für Naturforschung (West Germany) 1952, v. 7a, no. 11, p. 744-749.

The present paper deals with the imitation of the semiconducting elements (diamond, Si, Ge, grey Sn) of the fourth principal group of the periodic system by means of compounds of elements of the third principal group (Al, Ga, In) with elements of the fifth principal group (P, As, Sb) which have not hitherto been known as semi-conductors. As a result of the quantum-mechanical resonance between homopolar and heteropolar binding share, one can make predictions concerning the semi-conductor properties of these compounds, which are in good agreement with the experiments. These compounds in a few properties go far beyond the elements of the fourth group. For example, in the case of InSb, electron mobilities up to 25,000 cm^2/volt sec are measured. (Author)

Theoretical Physics

USPEKHI FIZICHESKIKH NAUK (USSR) 1959, (Progress of Physical Sciences).
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

V. 67, no. 4, p. 549-750, PB 141 049T-15
V. 68, no. 1, p. 3-198, PB 141 049T-16

Consists of abstracts in English.

Bogolyubov, N. N. and Shirkov, D. V.
INTRODUCTION TO THE THEORY OF QUANTIZED FIELDS, tr. by G. M. Volkoff, ed. by R. E. Marshak. Vol. 3 of series: Interscience Monographs and Texts in Physics and Astronomy. [1959] 720p. 136 refs.
Order from IP $17.00

Trans. of mono. Moscow, 1959.

This book deals with new trends of the theory of quantized fields developed up to 1957. It is intended for theoretical physicists dealing with nuclear physics and the physics of high-power elementary particles, and for mathematicians studying the applications of the theory of generalized functions. The chapters are entitled: (1) Classical theory of free fields, (2) Quantum theory of free fields, (3) The scattering matrix, (4) Removal of divergences from the S-matrix, (5) Application of the general theory of the removal of divergences to special cases, (6) Schrodinger equation and dynamic variables, (7) The method of functional averaging, (8) The renormalization group, and (9) Dispersion relations.

Kulikovskiy, A. G.
ON MOTIONS WITH HOMOGENEOUS DEFORMATIONS IN MAGNETOHYDRODYNAMICS. [1959] 4p. 3 refs.
Order from MDF $4.00 MDF K-191

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 120, no. 5, p. 984-986.

Solutions which describe the motion of a viscous heat conducting medium with finite electrical conductivity are obtained for the magnetohydrodynamics equations. Cases considered are those where the magnetic lines of force are and are not straight lines.

Vaynshteyn, L. A.
THE METHOD OF APPROXIMATE SEPARATION OF VARIABLES AND ITS APPLICATION TO THE BOUNDARY PROBLEMS OF ELECTRODYNAMICS AND ACOUSTICS. [1959] 38p. 11 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-20283

Trans. of *Zhurnal Tekhnicheskoy Fiziki (USSR) 1957, v. 27, no. 9, p. 2109-2128.

The approximate method of solving two-dimensional boundary problems of electrodynamics and acoustics is presented in this article. It is based on the approximate separation of variables in a wave equation which is written in uniform curvilinear coordinates. This method is analogous to the approximate Hartree-Fock method in quantum mechanics (Z. Physik. 61: 126, 1930). The method is applied to a plane or rectangular waveguide, which becomes a sectorial speaker, and to surface waves that propagate along a wavy "corrugated" surface having good conductivity and the shape of a cycloid or a trochoid.

Vedenov, A. A.
CONCERNING SOME SOLUTIONS OF THE EQUATIONS OF HYDRODYNAMIC PLASMA. [1959] 3p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-20291

Trans. of *Zhur[nal] Eksp[erimental'noy i] Teor[eticheskoy] Fiz[iki] (USSR) 1957, v. 33, no. 6(12) p. 1509-1511.
Another translation is available from MDF $2.00 as MDF V-127 [1958] 3p.

When the cold-plasma-flow hydrodynamic equations $\partial v/\partial t + v(\partial v/\partial x) = (-e/m)E$, $\partial E/\partial x = -4\pi e(n - n_+)$, and $\partial n/\partial t + \partial(nv)/\partial x = 0$ are solved for the case when no external magnetic field is present, the wave equation

$$c_1 + \{\arcsin [n_+/(n-1)]/c_2\} \sqrt{c_2^2 - [(n_+/n)^2 - 1]^2} = \omega_0[(x/V) - t]$$

is obtained. Here v and V represent velocity, n is the electron density, n_+ is ion density, E is the electric field, c_1 and c_2 are integration constants, and $\omega_0 = \sqrt{4\pi n_+ e^2/m}$. If an external homogeneous and constant magnetic field, H, is applied along the z axis, the wave equation becomes

$$c_1 + \{\partial \arcsin [n_+/(n - \delta)]/c_2\} \sqrt{c_2^2 - [(n_+/n)^2 - \delta]^2} = \sqrt{\omega_0^2 + \Omega^2}\,[(x/V) - t],$$

where $\delta = (\omega_0^2 - \Omega^2)/(\omega_0^2 + \Omega^2)$, and $\Omega = eH/mc$. These solutions give the forms of waves with a finite amplitude that arise during propagation in a plasma whose density n_+ slowly varies in the direction of small n_+.

Thermodynamics

Grassman, P.
MASS AND HEAT TRANSFER BETWEEN TWO FLUID PHASES. [1959] 13p.
Order from ATS $17.95 ATS-68L33G

Trans. of Chem[ie]-Ing[enieur]-Tech[nik] (West Germany) 1959, v. 31, no. 3, p. 148-153.

Hunsinger, W[alter].
LA MESURE DES TEMPERATURES AVEC LES THERMOÉLÉMENTS. II. L'INFLUENCE DE LA TEMPÉRATURE DE COMPARAISON ET LA FAÇON D'EN TENIR COMPTE, tr. by Gauthier. 15 May 59 [12] p. (1 fig. omitted). Trans. No. A 572. (text in French).
Order from SLA mi$2.40, ph$3.30 CEA-tr-A572

Trans. in French of Arch[iv fur] Techn[isches] Messen [und Industrielle Messtechnik] (West Germany) 1958, v. 267, p. 77-78.

Nesina, L. V.
INFLUENCE OF TEMPERATURE STRATIFICATION ON HEAT EXCHANGE IN WATER. [1959] 3p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3527

Trans. of [Glavnaya] Geofiz[icheskaya] Observ[atoriya, Leningrad. Trudy] (USSR) 1956, v. 59, no. 121, p. 37-39.

Peculiarities of heat exchange in water are investigated on the basis of temperature distribution data from 5 bodies of water (Lake Belladonna, the Lenin Reservoir, and the "Tsimlyask" Reservoir in European USSR; the "Katta-Kurgansk" Reservoir in the Middle Asian territory; and Lake "Sevan" in Armenia). Expressions are presented for heat exchange in water for conditions under which temperature stratification plays a part and conditions under which stratification is not considered. The expression derived for approximating the heat exchange of shallow ponds in summer is

$$B = c\rho k(\partial Tn/\partial t),$$

where B represents the heat exchange in water, Tn is the surface temperature of the water, and $c\rho$ is the heat capacity of water.

Ribaud, G.
THERMAL CONDUCTIVITY OF POROUS AND PULVERULENT MATERIALS; A THEORETICAL STUDY (Conductibilité Thermique des Matériaux Poreux et Pulverulents; Étude Theorique) tr. by G. Gavrel. 1959, 24p. Technical trans. 801; C-3030.
Order from NRCC NRCC TT-801

Trans. of Chaleur et Industrie (France) 1937 [v. 18] no. 201, p. 36-43.

Schultz-Grunow, F.
TURBULENT HEAT TRANSMISSION IN THE CENTRIFUGAL FIELD (Turbulenter Warmedurchgang im Zentrifugalfeld). [1952] [19] p. (18 figs. omitted) 12 refs. Trans-186.
Order from SLA mi$2.40, ph$3.30 59-20075

Trans. of Forschung auf dem Gebiete des Ingenieurwesens (West Germany) 1951, v. 17, no. 3, p. 65-76.

The peculiar temperature separation effect of the vortex tube invented by Ranque (J. phys. radium 4: 112, 1933), and the strong supercooling in the wind shadow area of a circular cylinder against which there is a transverse flow of air, which was observed by Eckert and Weise (Forsch. Gebiete Ingenieurw. 13: 246-54, 1942) cannot be explained by means of the views regarding heat conduction which have been current hitherto. It is shown that the cause of this is a thermodynamic phenomenon which had not been taken notice of hitherto. By including it we get a more general formulation of heat conduction, which reveals the possibility of an increase of the heat conduction by means of stratification and even the transfer of heat from a lower to a higher temperature. The temperature separation effect is hereby calculated in agreement with the experiment, adding a closely related assumption concerning the flow phenomenon. Reference to temperatures in free boundary layers. (Author)

Wave Propagation

Fok, V. A.
FRESNEL DIFFRACTION FROM CONVEX BODIES. [1959] [19]p. 3 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-20285

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1951, v. 43 [no. 4] p. 587-[599].

For the example of diffraction by a sphere it is shown that for the body with finite curvature the most important terms in the expression for the wave field behind it can be written as Fresnel integrals. This term does not depend on (as in the case of the usual Fresnel diffraction) the material of the body diffracting the wave. But to the leading term is added another forming as it were, a background on which is superposed the Fresnel diffraction maxima, and this additional term (which is therefore a background) does depend on the electrical properties of the body diffracting the wave.

Gershman, B. N., Ginzburg, V. L., and Denisov, N. G.
THE PROPAGATION OF ELECTROMAGNETIC WAVES IN PLASMA (IONOSPHERIC). [1959] 90p. 85 refs.
Order from LC or SLA mi$4.80, ph$13.80 59-20286

Trans. of Uspekhi Fiz[icheskikh] N[auk] (USSR) 1957, v. 61, no. 4, p. 561-612.
Another translation is available from OTS $1.00 as AEC-tr-3493 [1958] 83p.

Contents:
Propagation of electromagnetic waves in a homogeneous magnetoactive plasma
Normal waves in a magnetoactive plasma with account taken of the thermal motion of the electrons
Normal waves in a magnetoactive plasma with account taken of ion motion
On one peculiarity of the field of an electromagnetic wave propagated in an inhomogeneous isotropic plasma
Behavior of the field taking into account the influence of plasmic waves
Behavior of the field in a magnetoactive inhomogeneous plasma
Interaction of ordinary and extraordinary waves in the ionosphere ("multiplication" effect of reflected radio signals).
Interaction of waves with account taken of absorption
Boundary polarization of waves leaving the ionosphere

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

AKADEMIYA NAUK KAZAKHSKOY SSR [ALMA ATA]. VESTNIK, 1959 [VOL. 15] (Herald of the Academy of Sciences of the Kazakh SSR).
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

No. 1, p. 3-108, PB 141 026T-2
No. 2, p. 3-123, PB 141 026T-3

Consists of abstracts in English.

AKADEMIYA NAUK SSSR. DOKLADY, 1959 (Reports of the Academy of Sciences of the USSR).
Order from OTS $1.40, $20.00/6 mo.
Foreign $1.65, $24.50/6 mo.

V. 124, no. 6, p. 1183-1376, PB 141 015T-31
V. 125, no. 2, p. 247-464, PB 141 015T-33
V. 125, no. 3, p. 471-687, PB 141 015T-32
V. 126, no. 2, p. 231-455, PB 141 015T-34

Consists of abstracts in English.

AKADEMIYA NAUK URSR, KIEV. DOPOVIDI, 1959, NO. 5, P. 463-559 (Reports of the Academy of Sciences UKR SSR). [1959] 1v. SOV-21-59-5-(1-25)/25.
Order from OTS $0.60, $3.50/6 mo. PB 141 016T-15
Foreign $0.85, $5.00/6 mo.

Consists of abstracts in English.

EXPENDITURES OF THE SOVIET GOVERNMENT FOR CURRENT SCIENTIFIC RESEARCH AND THEIR PROSPECTIVE GROWTH IN THE NEAR FUTURE, ESPECIALLY IN THE MILITARY FIELD. 19 May 59 [17]p. 2 refs. AF 1255814.
Order from LC or SLA mi$2.40, ph$3.30 59-22190

Trans. from Soviet open sources, 1926-1959.

THE GROWTH OF SOVIET SCIENCE (Rastsvet Sovetskoy Nauki). 15 Jan 59 [2]p. AF 1255436.
Order from LC or SLA mi$1.80, ph$1.80 59-22203

Summary trans. from Sovetskaya Aviatsiya (USSR) 1958, no. 291, p. 1.

A summary of an editorial.

*IZMERITEL'NAYA TEKHNIKA (USSR) 1959, NO. 7, P. 1-64 (Measurement Techniques). [1959] lv. SOV-115-59-7-(1-33)/33.
Order from OTS $0.70, $4.00/year PB 141 112T-11
Foreign $0.95, $5.50/year

Consists of abstracts in English.

SCIENTIFIC INFORMATION REPT.
Order from OTS $2.75, $28.00/year

17 July 59, PB 131 891T-26
31 July 59, PB 131 891T-27
4 Sep 59, PB 131 891T-29
2 Oct 59, PB 131 891T-31

Consists of unevaluated information extracted from publications of USSR, Eastern Europe, and China.

Irisawa, Kunio and Yokota, Sosaku.
PHOTOGRAPHIC METHOD FOR THREE-DIMENSIONAL PICTURES USING CONTINUOUS FILMS. 26 Feb 54 [2]p.
Order from LC or SLA mi$1.80, ph$1.80 59-17867

Trans. of Japanese patent report Showa 28-6525, 18 Dec 53, appl. 26 Oct 49, spec. appl. no. Showa 24-10981 (case no. Showa 26-443) representative: Masajiro Aikawa.

The invention uses the empty space between the parallel pictures of stereoscopes to accomodate other sets of pictures, thus saving film yardage even when continuous projection is necessary and enabling the filming of a constant quantity of material at all times. Two sets of reels at intervals of three sets each are placed on each film (i.e., the first and fourth reel sets are placed on one film, the third and sixth on another, the fifth and eighth on still another, etc.) and the two reels are used at each instance of photographing.

Leboutet, L.
MEMO ON THE INTRODUCTION OF ENGLISH WORDS INTO THE PSYCHOLOGICAL VOCABULARY (Note sur l'Introduction de Mots Anglais dans le Vocabulaire de la Psychologie). [1959] [11]p. 10 refs.
Order from SLA mi$2.40, ph$3.30 59-20154

Trans. of Enfance (France) 1955, v. 8, no. 5, p. 509-514.

The massive penetration of English words or their derivatives into the vocabulary of the psychologist of non-English-speaking countries (specifically France) is deplored and viewed with alarm. There are also comments on the pitfalls of conventional translation, e.g., mistaking homonyms for synonyms.

Teplov, L. and Lyapunov, A. A.
CYBERNETICS IN THE USSR. 14 Aug 59, 41p. (illus. omitted) 44 refs. JPRS: 876-D.
Order from OTS $1.25 59-11770

Trans. of Tekhnika Molodezhi (USSR) 1959 [v. 27] no. 2, p. 5-6; Izvestiya Vysshikh Uchebnykh Zavedeniy. Matematika (USSR) 1958, no. 5, p. 166-174 and Problemy Kibernetiki (USSR) 1958, no. 1, p. 5-23.

Three popular articles on the basic principles of cybernetics.

SOCIAL SCIENCES

Ramos, Ernesto Augusto
THE INFLUENCE OF THE PERFORMANCE OF MILITARY SERVICE ON THE LIFE OF THE NATIVES AND ON THE ECONOMY OF THE PROVINCE OF ANGOLA. PT. I. (Influencia da Prestacao do Servico Militar na Vid Vida dos Indigenas e na Economia da Provincia de Angola: Pt. 1) tr. by Medardo Gutierrez. [1958] 39p. [1 map omitted] 4 refs. H-0927 A.
Order from LC or SLA mi$3.00, ph$6.30 59-12011

Trans. of Revista Militar (Portugal) 1957 [v. 9] nos. 8-9, p. 469-502.

Background material is presented which relates to the prehistory, ethnolinguistic characteristics, mores, economics, etc. of the primitive peoples of Angola who are subject to military conscription under Portuguese administration. (See also 59-12010)

Ramos, Ernesto Augusto
INFLUENCE OF THE PERFORMANCE OF MILITARY SERVICE ON THE LIFE OF THE NATIVE AND ON THE ECONOMY OF THE PROVINCE OF ANGOLA. PT. II. (Influencua da Prestacao do Servico Militar na Vida dos Indigenas e na Economia da Provincia de Angola. Pt. 2) tr. by Medardo Gutierrez. [1958] 41p. (21 photos, 1 map omitted) 20 refs. H-0927 B.
Order from LC or SLA mi$3.30, ph$7.80 59-12010

Trans. of Revista Militar (Portugal) 1957, v. 9, no. 10, p. 565-595.

The impact of Portuguese military administration upon native conscripts in Angola is described, with particular reference to the long-term results of compulsory instruction in the Portuguese language, in hygiene and military discipline, and in Catholic doctrine, as reflected in attitudes, work habits and capabilities upon return to civilian life. (See also 59-12011)

BOOK REVIEWS

The following book reviews can be ordered by number from LC. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR-SOV/1887
Pruzner, Saul L'vovich
EKONOMIKA I ORGANIZATSIYA ENERGETICHESKOGO PROIZVODSTVA (Economics and Organization of Electric Power Production) Moscow, Gosenergoizdat, 1958. 333 p. 12,900 copies printed. 4p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1917
Vorotilov, Viktor Andreyevich
VOSPROIZVODSTVO OSNOVNYKH FONDOV PROMYSHLENNOSTI (Reproduction of Capital Assets in Industry) [Leningrad] Izd-vo Leningradskogo universiteta, 1958. 169 p. 2,800 copies printed. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/1920
Katsenelenbaum, Zakhariy Solomonovich
OSNOVNYYE I OBOROTNYYE SREDSTVA V MASHINOSTROYENII (Fixed and Current Working Assets of the Machinery-Manufacturing Industry) Moscow, Mashgiz, 1958. 174 p. 5,500 copies printed. 3p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2202
Murashov, Aleksey Mihaylovich, and Nikolay Aleksandrovich Klimov
VYSOKOPROIZVODITEL'NYYE PRISPOSOBLENIYA K METALLOREZHUSHCHIM STANKAM (High-productivity Fixtures for Metal-cutting Machine Tools) Moscow, Oborongiz, 1959. 150 p. 11,100 copies printed. 2p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2204
Klushin, M. I.
REZANIYE METALLOV; ELEMENTY TEORII PLASTICHESKOGO DEFORMIROVANIYA SREZAYEMOGO SLOYA (Metalcutting; Elements of the Theory of Plastic Deformation of the Removed Layer) 2nd ed., rev. Moscow, Mashgiz, 1958. 454 p. 16,000 copies printed. 4p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2211
Malyarov, Vladimir Vladimirovich
OSNOVY TEORII ATOMNOGO YADRA (Fundamental Theory of the Atomic Nucleus) Moscow, Fizmatgiz, 1959. 471 p. Errata slip inserted. 18,000 copies printed. 3p. Microfilm $1.80, Photocopy $1.80

BR-SOV/2232
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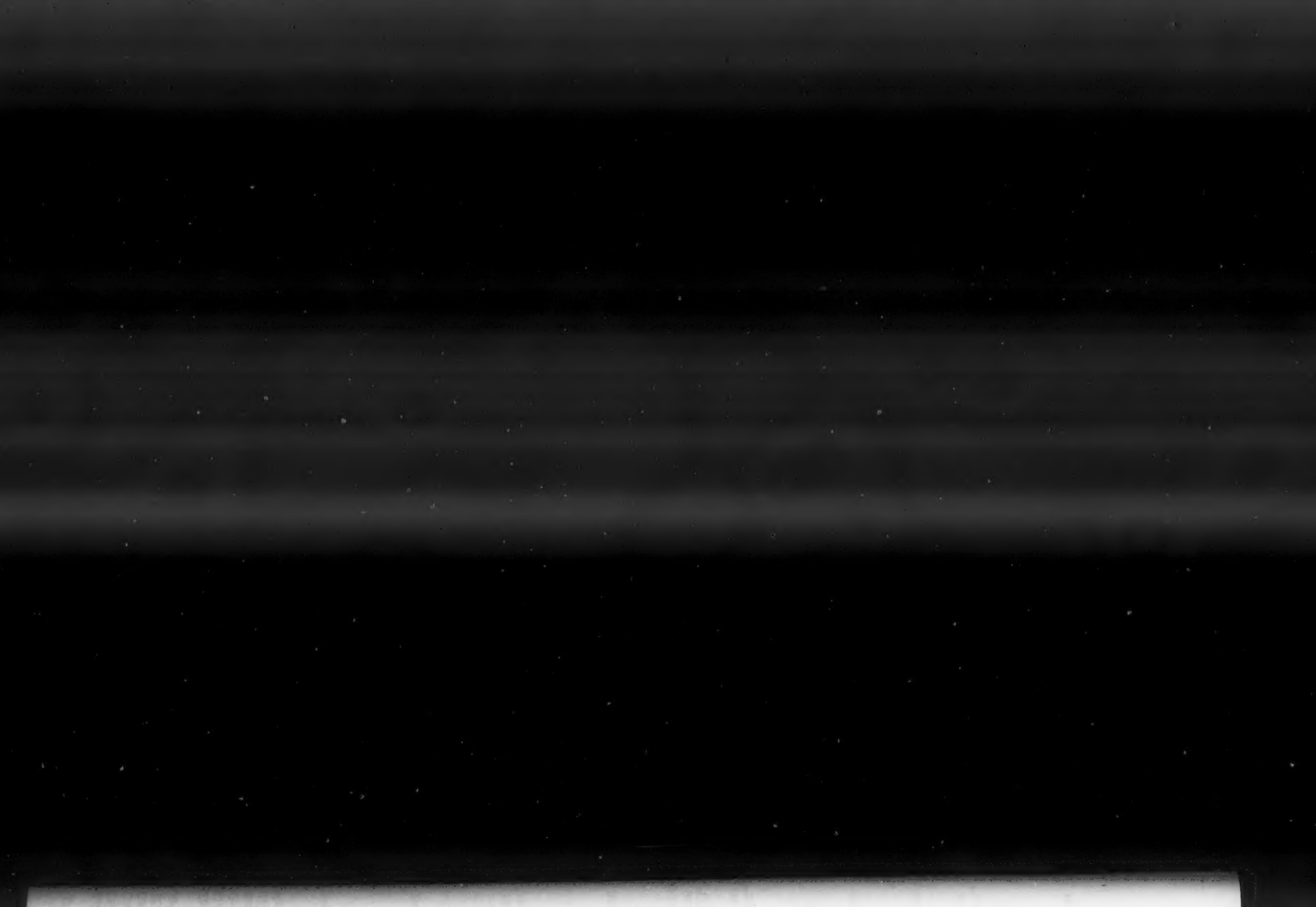

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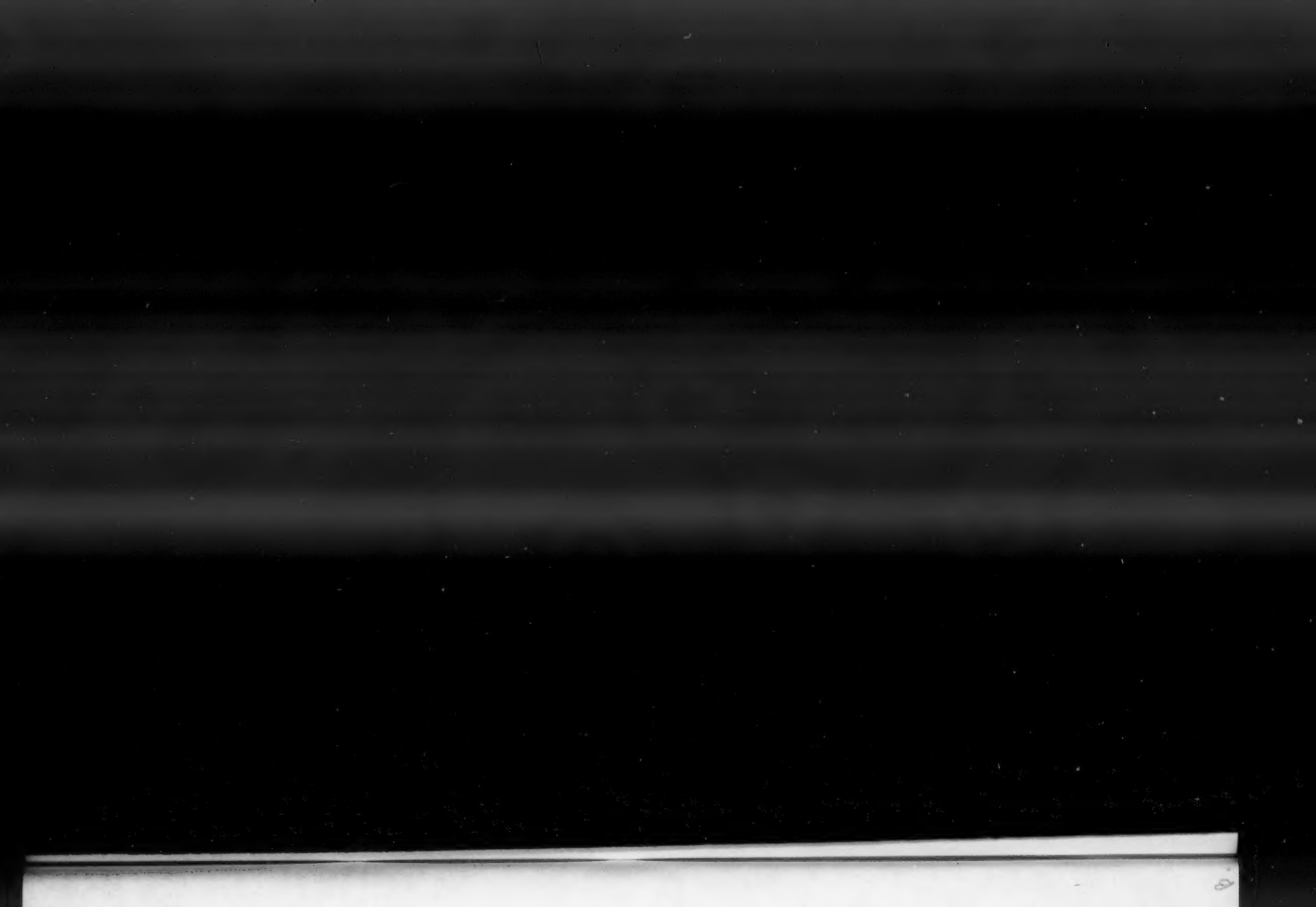
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